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ABSTRACT

A questionnaire dealing with knowledge about Acquired Immune Deficiency Syndrome (AIDS) and how it is communicated, with behavior involving risk of human immunodeficiency virus (HIV) infection, and with public policy for dealing with AIDS was completed by 1,259 Canadian adults. Canadians had a generally high level of knowledge about the transmission of HIV infection, about the distinction between HIV infection and AIDS, and about the efficacy of different methods to prevent the transmission of HIV. Most information about HIV infection and AIDS came through the mass media. Canadians were strongly accepting of the wide involvement of a broad range of health, governmental, and voluntary organizations in promoting AIDS education. Concern about AIDS had led to significant changes in the sexual practices of respondents which in turn have reduced the likelihood of HIV transmission. Respondents were strongly supportive of the rights of HIV-infected persons to freedom from discrimination, and believed these rights should be protected by law. Only a small minority expressed opinions suggesting they fear that casual contact would lead to HIV infection. (Results are reported in chapters 2 through 5 of this report; the first chapter describes study objectives and survey procedures and the sixth and last chapter provides conclusions and recommendations; 39 data tables are included.) (NB)

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AIDS in Canada

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AIDS in Canada: Knowledge, Behaviour, and Attitudes of Adults

A study funded by the Federal Centre for AIDS,
Health and Welfare Canada, through the
National Health Research and Development Program

AIDS in Canada

Knowledge, Behaviour, and Attitudes of Adults

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AIDS in Canada: Knowledge, Behaviour, and Attitudes of Adults

1 Study Objectives and Survey Procedures

Describing the need for social science research on acquired immunodeficiency syndrome (AIDS), the 1988 report of the Royal Society of Canada[1] identifies three "populations" whose attitudes and behaviour are critical: people with AIDS or people infected by the human immunodeficiency virus (HIV), those at risk of infection, and people who are, voluntarily or as part of their jobs, involved with those who already have AIDS and HIV-infected people. It is not difficult to see how the results of research on these groups can inform health-promotion initiatives. Less obvious in the context of dealing with AIDS is the need for research, of the kind presented in this report, on the attitudes and behaviour of a representative cross-section of the Canadian population, a majority of whom are not personally at risk.

Between September and December 1988, 1259 Canadians answered a thirty-minute questionnaire for interviewers calling from the Institute for Social Research at York University. The questions dealt with knowledge about AIDS and how it is communicated, with behaviour involving risk of HIV infection, and with public policy for dealing with AIDS.

Such a study was necessary for three reasons. First, in order to estimate the *incidence* of behaviour, it is necessary to sample from the entire population at risk. In order to determine the number of Canadians who use injection drugs, for example, it is not sufficient to survey injection drug users alone; instead, a representative sample of the population must be asked if they use injection drugs. The same argument applies to the incidence of sexual practices that carry the risk of HIV infection. In this context it is worth remembering that, while the percentage of the population at risk from needle sharing is likely to be quite small, each tenth of 1 percent of the population represents about eighteen thousand Canadians.

This argument applies also to subgroups of the population. For example, in order to determine whether people with more than one sexual partner take effective precautions against HIV infection, a representative sample of that sub-population is required. Since individuals with more than one partner cannot be identified on the basis of visible characteristics, they must be located through a sample of the entire population. Respondents in that representative sample can then be asked about their sexual practices, and those with more than one partner can be asked about whether they take precautions.

This strategy has its limits. Not enough members of very small groups, such as injection drug users, can be located in representative population samples to provide adequate information about the group. While the present study provides a fairly precise estimate of the incidence of injection drug use, it cannot tell us much about the age, marital status, location, and other characteristics of drug users. That kind of investigation would require a survey in which injection drug users were sampled more directly.

The second rationale for this study of Canadian

adults reflects the fact that, in various ways, very large numbers of Canadians know about and are affected by AIDS. News and information about AIDS is almost impossible to avoid; necessary public-education efforts often cannot be confined to individuals at immediate risk; parents face dilemmas about educating their children; and considerable numbers of people know or know of someone with AIDS or who is HIV infected. Effective mobilization against AIDS requires broad public support and understanding.

Recent controversy over confidential testing for HIV infection and providing clean needles to injection drug users demonstrates the need for an informed public. Often researchers are able to identify and quantify the advantages and disadvantages of alternative policy positions. For example, existing research on such programs provides the basis for predicting whether providing needles to injection drug users will decrease the sharing of needles and the consequent spread of HIV infection. But evidence of the effectiveness of needle-exchange programs alone will not bring them into being. Also necessary is a broad public acceptance, or at least the absence of concerted opposition, to a public program that acknowledges and does not punish the use of illegal drugs.

Although the level of personal risk of HIV infection varies enormously across the population – as a function of sex, sexual orientation, age, marital status, and so on – most educational programs cannot be directed exclusively to people at risk. The rest of the population must at least be prepared to tolerate messages designed to alter the behaviour of what may be a minority of Canadians. The general acceptance of advertising condoms is an encouraging sign of increased public tolerance. Identifying gaps in public knowledge and misinformation makes it easier to develop broad public support for AIDS education.

Whether Canadians are well informed about AIDS has broader consequences as well. The continued success of a blood-donation system based on voluntary contributions, for example, requires that Canadians know that AIDS cannot be spread through blood donations. Our commitments to individual rights can be compromised by the mistaken beliefs that AIDS can be spread though food prepared by HIV-infected persons or by casual personal contact between teachers and students or health-care workers and patients. Not only are broad principles placed at risk, but misinformation about AIDS causes real harm to people living with AIDS and to their friends, families, and caregivers, to HIV-infected persons, and to individuals and groups of Canadians perceived to be at high risk.

A third rationale for this study of the Canadian adult population involves the intrinsic importance of broad public understanding of a major threat to public health. An informed citizenry is a necessary and important element of an effective and humane societal response to AIDS. A high level of public knowledge also improves the quality of individual and community life. The belief that HIV infection can be spread through casual contact results in the stigmatization of HIV-infected people; but the people holding that belief are also harmed. The belief that one is at risk from casual contact with an invisible, deadly virus is certainly not conducive to good mental health.

In formulating policies to deal with AIDS, polls cannot take the place of coherent public policy-making,[2] but public understanding of AIDS provides policy-makers with an environment for effective and compassionate response to the threat from AIDS.

Contents of the Survey Questionnaire

The questionnaire was designed to achieve four objectives. First, it was to provide an assessment of how much and what Canadians know about AIDS. At the very beginning of the questionnaire, respondents were asked: to describe AIDS in their own words; what the most common method of transmission of HIV infection is at present; and whether they thought certain individuals and groups were at particularly high risk of HIV infection. There followed a series of questions that directly measured individuals' knowledge of HIV transmission and of the effectiveness of different methods of preventing transmission. In addition to providing information about the average level and range of variation in knowledge of AIDS, these data can be used to determine the extent of differences in knowledge between women and men and among age, socio-economic, and regional and ethnic groups.

The second objective was to determine how people find out about AIDS and who they feel should be responsible for providing that information. The concern here was to assess the effectiveness of alternative forms of communication and to assess public perceptions of the legitimacy of information coming from different organizations and institutions.

The third objective of the survey was to estimate the prevalence of behaviour that potentially exposes individuals to HIV infection and to determine what personal characteristics are associated with higher levels of risk. Except for one question about injection drug use, these questions dealt with aspects of sexual behaviour, including the numbers and sex of sexual partners, the incidence of sex with partners who were not well known to the respondent, and whether and how people have changed their behaviour to prevent HIV infection.

The fourth objective was to discover the state of public opinion on the key policy issues that have been raised by the AIDS epidemic. These include the protection, in employment and housing, of people who are HIV positive, confidential testing, providing needles to drug users, and AIDS education in schools.

Of course, the survey also included an extensive set of questions designed to determine respondents' demographic and socio-economic characteristics. Different sectors of the population are likely to have different levels of knowledge, behaviour, and attitudes towards AIDS, and the design of effective programs to prevent the spread of HIV infection requires an understanding of the extent and nature of this variation.

How Survey Respondents Were Selected

The target population for the survey was all Canadians in the ten provinces, but not the Northwest and Yukon Territories,[1] who were at least eighteen years of age. To ensure the representativeness of the sample, telephone numbers were selected at random. This "random digit dialing" procedure ensures that individuals with unlisted numbers or who have moved since the publication of the directories are just as likely to be selected as individuals who have listed numbers. Because mobility (and hence the probability of not having a listed telephone number) may be correlated with the attitudes and behaviour that are measured in the survey, the use of a directory for sampling might have led to biases in the data collection. While individuals with no telephones are excluded from the sample, present estimates are that fewer than 2 percent of Canadians do not have telephones.

Since it cannot be assumed that the person answering the interviewer's first call is representative of the household, the respondent in each selected household was randomly chosen from among the adults living there. This is accomplished using what is known as the "last birthday" method of selection: the person responding to our first successful call to a number was asked which adult in the household had the most recent birthday, and that person became the selected respondent. In order to ensure that respondents who were more often at home were not over-represented in the sample, a minimum of fifteen attempts were made to reach each selected telephone number.

Design of the Questionnaire

The initial design of the questionnaire involved extensive consultations among AIDS researchers, people engaged in AIDS education, and survey researchers. The resulting draft questionnaire was then modified on the basis of the results of two pre-tests. The initial pre-testing of the questionnaire, in English, was followed by pre-testing of a revised English questionnaire and the French translation. Aside from numerous minor modifications, the main result of the pre-test was to lead us to simplify some of the questions and to include three general questions[4] at the very beginning of the questionnaire so that respondents were not immediately confronted with the relatively difficult open-ended questions about the definition of AIDS and the transmission of HIV infection. The pre-test was also used to determine the most frequent responses to some open-ended questions so as to simplify the recording of answers to those questions in the main survey.

For the most part the questionnaire makes use of "closed-ended" questions, in which the respondent is asked to choose from a number of specified responses. For collecting precise factual information, closed-ended questions provide more reliable information than open-ended questions, in which no answers are suggested to respondents.[5]

The survey began, however, with a series of open-ended questions designed to discover the public's general perceptions of AIDS. Answers that fitted into one of a number of pre-defined categories established from the pre-test interviews were coded immediately by interviewers, while answers that did not fit (or that left the interviewer in doubt) were recorded verbatim. From these additional responses an enlarged classification scheme was designed to accommodate all the responses. The responses were then manually classified into categories.

The advantage of open-ended questions is that they do not "lead" respondents. Whatever is said can be recorded and analysed later. The answers to open-ended questions gave us access to ideas and feelings that might not have been anticipated

beforehand. For this advantage there is a price. Even for experienced and extensively trained interviewers, open-ended questions generate considerably higher levels of non-response than closed-ended questions. Also, some respondents could or would not provide an answer that was full and clear enough to allow it to be classified.

Throughout the questionnaire, efforts were made to determine whether or not respondents actually had opinions about the questions being asked and to phrase questions so that respondents were able to say that they had no opinion without putting themselves in a negative light. There is strong evidence in the research literature that unless respondents are assured that not knowing the answer to a question is common and acceptable, they will tend to guess the answers to questions they cannot answer. These guesses diminish the reliability of the resulting data and cloud the critical distinction between *mis*information and lack of information.[6]

One obvious question is why people would be prepared to reveal information about their sexual practices to complete strangers over the telephone. The extent of non-response to these specific questions was higher than that to more impersonal questions, but people are more reluctant to disclose their income than to reveal the numbers and gender of their sexual partners. In general, people answer these sensitive questions for much the same reasons that they answer other questions. Accounting for respondents' initial agreement to be interviewed is some combination of public spiritedness, a general willingness to accommodate polite requests and desire to avoid being rude, and perhaps the attractiveness of having one's views heard by a sympathetic and anonymous voice. Once the interview has begun, interest in the topic of the survey, the desire to avoid going back on a commitment to the interviewer, and psychological inertia lead almost all respondents to carry through to the end.

The survey results themselves provide direct evidence of this point. Saying to prospective respondents that our survey was about AIDS did not result in a lower response rate than for other surveys of similar length carried out by the Institute for Social Research; nor were respondents unusually likely to terminate the interview at the start of the section dealing with sexual behaviour.

Although we had little difficulty obtaining responses to the questions about injection drugs and sexual practices, the survey is likely to underestimate the extent of risk-taking. Three factors contribute to this bias. First, non-response is likely to be higher among the groups of people who are at higher risk because their lifestyles are likely to involve their more often being away from home and out of reach of our interviewers' calls. Second, some respondents will be unwilling to disclose fully activities that place them at risk (especially since one such activity, injection drug use, is illegal). And third, some respondents will fail to remember activities that placed them at risk.

While there were compelling reasons to include questions about risk-taking behaviour in a large-scale telephone survey dealing with knowledge of AIDS and public policy, it is worth briefly considering whether another method of data collection might have produced better results. Although for particular populations, such as gay men, street people, and students in high schools, colleges, and universities, self-administered questionnaires may provide better data, the consensus in the now fairly extensive methodological literature is that for large representative samples telephone interviews are as effective as other survey methods at minimizing bias.[7] Telephone surveys provide a high degree of anonymity compared to face-to-face surveys, and for studies of the general public achieve higher response rates than mailed surveys.

The survey questions were designed to minimize the degree of non-response while respecting the rights of our respondents. In order to take advantage of the rapport that develops over the course of an interview and so that respondents could make use of information provided implicitly in the course of asking questions about the transmission of AIDS, the questions about behaviour were placed towards the end of the interview, just before the background questions. Before they were asked these questions, respondents were assured: "I have some questions now about how AIDS affects you personally. Before

I ask these questions, I want to remind you that your answers will be kept completely confidential. Of course, you have the right to refuse to answer these questions." In line with our experience in previous surveys, virtually all the respondents proceeded to answer our questions.

Data-Collection Procedures

The survey was administered using ISR's computer-assisted telephone interviewing (CATI) system. Interviewers read the questions from a computer monitor and entered the answers from the keyboard. To maintain the high quality of the data, interviews were monitored by supervisors while they were in progress. The survey also made use of the CATI system's capacity to manipulate the content of questions so that randomly selected parts of the sample would receive different versions of a question. This strategy was used extensively for the questions dealing with public policy in order to provide insights into the motivation behind responses. (The technique is described in more detail at the beginning of chapter 5 of this report.)

Interviews were conducted in French or English, with calls initiated in French in Quebec and in English outside Quebec. At the respondent's request, interviews were done in either official language. Included among the non-respondents are thirty-five individuals (or 2.1 percent of all those selected) who did not speak French or English well enough to complete the interview. In principle it would have been possible to interview these respondents using translations of the questionnaire. Unfortunately, the non-English, non-French speakers are divided into many different groups, and translations into a number of different languages (Cantonese, Greek, Italian, and Portuguese, at minimum) would have been necessary to obtain interviews with a major proportion of them. For a survey this size, such an effort was not justified. In the context of AIDS there may be justification for conducting studies of particular communities with significant proportions of non-French, non-English speakers. In such a study, however, translation of the questionnaire should be coupled with a sampling procedure designed to oversample respondents from the desired group or groups.

The overall response rate for the survey was 64 percent, a figure near the average of the response rates for national telephone surveys conducted by ISR. This is encouraging, since it indicates that

Canadians are as prepared to talk about AIDS as about other subjects. In addition to the 28 percent of respondents who refused to participate, 3 percent did not speak French or English well enough to complete the interview, and with the remaining 5 percent it was not possible to arrange an interview after repeated efforts. After the brief initial introduction, the average length of the interviews was 29.6 minutes.

Sample Size and the Precision of Estimates

The size of the sample, 1259, places some constraints on the findings of this survey. Estimates of percentages that are based on the entire sample – for example, the percentage of Canadian adults who approve of anonymous HIV testing – are correct to within approximately 3 percent, with 95 percent confidence (that is, 95 percent of the time the population value is within 3 percent of the value observed for the sample).

The precision of estimates declines steadily as smaller groups within the population are considered. Separate estimates for women and men (for example, an estimate of the percentage of men who approve of anonymous testing) are accurate to within about 4.5 percent; for groups one-fourth the size of the total population, the 95 percent confidence interval is plus or minus 6 percent; and for groups one-twelfth the size (that is, about 100 of the total 1250 observations), it is plus or minus 10 percent. In other words, for a group represented in the sample by 100 observations, an estimate that 50 percent had some attitude or behaviour tells us only that the true value is in the range between 40 and 60 percent.[8]

What this means practically is that estimates for the population are highly precise and that differences between women and men, among age and education groups, and among major regions of the country are known with fair precision. For smaller groups, however, the findings are not very precise. Most important, not enough respondents are gay or bisexual men to permit analysis of their characteristics and behaviour.

With sufficient funds, these limitations, imposed by the sample size, can be overcome. They were well understood at the time that the survey was designed. The decision to use a sample of about 1250 respondents reflected in part the fact that this was the first survey of its kind in Canada. The results of the present survey are a marked improvement on previous information about Canadians' knowledge, attitudes, and behaviour; they also provide the basis for deciding whether a larger-scale study is justified in the future.

Terminology in the Questionnaire and in This Report

Numerous commentators have remarked on the significance of the terminology used to describe AIDS and HIV infection.[9] The use of the expression "AIDS virus," for example, incorrectly implies that people with HIV have AIDS; and the expression "general population," used in the context of the increased prevalence of HIV infection, often refers implicitly to the heterosexual population, excluding homosexuals, whose needs are thereby defined as lying outside the general interest.

This report follows the guidelines on terminology referring to AIDS outlined by Francis Bates in *Le Virulent*.[10] In formulating the questionnaire, however, the main concern was that questions be understandable to members of the public with relatively little knowledge about AIDS. In some cases, these practices conflict. For example, while this report refers to HIV infection, the questionnaire refers to "the AIDS virus."

Interpreting the Results of This Study

Anyone examining these results should consider two points. First, statistical significance alone – the criterion by which it is determined whether an observed difference could have been the result of chance – is not a sufficient guide to these data. With a sample of more than twelve hundred respondents, findings that just reach statistical significance are often too weak to form the basis for policy choice. For this reason, the analysis focuses more closely on the *magnitudes* of the differences among sectors of the population than on the degree of statistical significance. Of course, it is necessary that differences that could have arisen from random error be identified as such.

Second, simple estimates of the differences between groups will often be less informative than analysis that takes account of two or more variables simultaneously. In examining age differences in knowledge of AIDS, for example, it is important to recognize that younger people, on average, have more education than older Canadians, as a result of the rapid growth of educational institutions over time. While *both* age and education may affect knowledge of AIDS, it is important to differentiate among their effects.

2 Levels of Information about AIDS

To have escaped word of AIDS in Canada in 1989 is not easy. Of the 1259 Canadians who responded to the survey, only 6 said that they had never heard of AIDS, a number so small that it is not meaningful to talk about the differences between people who have and have not ever heard of AIDS. There is, however, great variation in how much Canadians know about AIDS and about the transmission and prevention of HIV infection. An understanding of the nature of differences in knowledge about AIDS – between women and men, and among regions and cultural and socio-economic groups – provides a basis for targeting efforts to provide information about AIDS and to slow the spread of infection.

Using respondents' answers to the open-ended questions at the start of the questionnaire, this chapter begins with a description of Canadians' understanding of what AIDS is, how it is transmitted, and who is at risk. On the basis of a series of factual questions about AIDS, the second part of the chapter provides more systematic information about what Canadians know about the transmission and prevention of AIDS. The third part of the chapter examines differentials in levels of knowledge about AIDS. Included in this analysis are comparisons among the major demographic categories, defined by gender, age, marital status, and parenthood; among socio-economic groups, defined by education, income, occupation, and labour-force status; among ethnic and religious groups; among regions and sizes of community; and among individuals with different levels of personal contact with the AIDS epidemic.

Descriptions of AIDS, of the Transmission of AIDS, and of Individuals and Groups at Risk

In order to prevent the responses from being affected by factual information provided in the course of asking other questions, the open-ended questions about AIDS were placed at the beginning of the questionnaire. The first question asked simply, "How would you describe AIDS?" Most respondents dealt with this question in medical terms: 27 percent referred to a virus or some similar aspect of AIDS, and 41 percent referred to the seriousness of the illness. The next largest group of responses, about 15 percent of the total, referred to the means of transmission and communicability of AIDS, mostly its sexual transmission. Fewer than 5 percent of respondents referred to AIDS in a hostile way or explicitly mentioned gay men: 2.1 percent of the responses referred to male homosexuality; another 1.2 percent referred to AIDS in a censorious manner (by calling it, for example, "a disgusting disease"); 0.8 percent referred to immoral lifestyles; and 0.4 percent referred to negative religious interpretations of AIDS. The exact distribution may be found in Table 2.1.

These answers indicate a high level of awareness of what AIDS is: on the whole, Canadians think about AIDS in medical terms rather than in terms of the groups it affects. Although virtually all Canadians say they have heard of AIDS, about one in twelve

TABLE 2.1
Responses to the question "How would you describe AIDS?"

Category of response (examples of response)	Percentage giving response
Responses stressing the seriousness of AIDS (a fatal illness, deadly, fatal)	40.8
Medical definitions (a virus, an immune system illness, a disease)	27.3
Sexual communication (venereal disease, a social disease)	8.2
Transmission via blood	1.1
Promiscuity	.9
Drug use (caused by drugs)	.1
References to more than one form of transmission of AIDS	3.9
References to the communicability of AIDS	1.2
Male homosexuality (a gay disease)	2.1
Hostile references to AIDS (a disgusting disease)	1.2
References to lifestyles and society (immoral lifestyles, result of a permissive society)	.8
References to religion (a curse from God)	.4
Wisecracks	.9
Uncodeable responses	1.2
Don't know	8.5
No response or refused to say	1.4
Total	100.0

respondents, 8.5 percent, could not give even a simple description of the disease (to which should be added the 0.5 percent who had never heard of AIDS). Another 2 or 3 percent of the respondents gave answers that suggested they did not know what AIDS is.

The next question, reported in Table 2.2, reads, "What do you think is the most common way of becoming infected with the AIDS virus?" It too was answered primarily with reference to *source* of risk, rather than to the *groups* at risk. Sixty-three percent of respondents answered correctly that sex or sexual intercourse is the primary means of transmission. About 15 percent of the responses referred to needles, transfusions, and other methods of transmission. Only 10.5 percent of respondents answered the question by referring to sexual orientation or to sex between homosexuals. A very small proportion, fewer than 1 percent, answered this question in moral terms. References to other sources of transmission made up most of the remaining answers; only 3.7 percent of respondents were unable to give any answer. Just 1 percent of the responses suggested a fundamental misunderstanding of the transmission process.

Next, respondents were asked, "Are there some [groups or] individuals who are more likely to become infected with the AIDS virus than others?" Randomly chosen halves of the sample received versions of the question that did and did not include mention of "groups" at risk. The purpose of this experiment with the wording of the question was to determine whether perceptions of risk depend on the framework – either individual behaviour or group vulnerability – in which the question is posed. The distributions of responses to the two versions of the question turned out to be quite similar, which indicates that most respondents already have a firm idea of who is affected by AIDS. For both versions of the question, about 8 percent of the sample indicated that they did not know the answer. When the question referred only to individuals, 13 percent of the respondents (excluding those who said they did not know) said that no individuals were more likely to become infected; when the question referred to "groups or individuals," 9 percent gave this answer.

To learn more about public perceptions of HIV infection, respondents who said that there were differences in risk were asked "which [groups or] individuals do you think are most likely to become infected with the AIDS virus?" Among AIDS researchers and educators, the critical distinction is whether risk is conceptualized in terms of group membership or in terms of behaviour. This is a complex question. Understood in demographic terms alone, gay men and injection drug users (and in the past, haemophiliacs) are at relatively greater risk than other sectors of the population. It is not membership in these groups, however, but particular activities that pose the risk of HIV infection. From a health-promotion standpoint, the concern is that individuals who are not or do not see themselves as members of stereotyped "risk groups" are unlikely to take precautions in the face of genuine risk.

Table 2.3 indicates that, when the question mentioned only individuals, about half the respondents mentioned gay men as the group at greatest risk; when both individuals and groups were mentioned, this proportion increased to about 60 percent. Between 11 and 20 percent of respondents, depending on which version of the question was asked, named promiscuous or sexually active people as most likely to become infected. Between 11 and 17 percent of respondents identified users of injection drugs as most likely to become infected. The remaining responses were distributed among a large number of alternatives. Given the wording of this question, the extent to which AIDS is identified with gay men, who account for the great majority of Canadian cases of AIDS and a clear majority of American cases, seems rather low. In addition to the approximately 8 percent of people who did not answer the question about differences in risk, 1.5 percent of respondents said such differences existed but were not able to specify which individuals or groups were at risk.

About half the respondents named a "risk group," gay men, as most subject to HIV infection. The question is whether these responses reflect the "demographic" facts of AIDS and HIV infection or whether they reflect a mistaken belief that infection is limited to particular groups in society. That only a

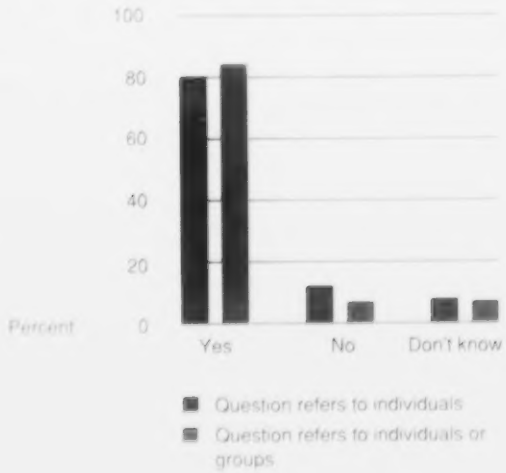
TABLE 2.2
Responses to the question "What do you think is the most common way of becoming infected with the AIDS virus?"

Category of response	Percentage giving response
Sex, intercourse (with an AIDS carrier)	63.0
Homosexual sex (unnatural sex)	10.1
Heterosexual sex	1.3
Anal sex	.6
Oral Sex	.3
Promiscuous sex	5.2
Contaminated needles, intravenous drugs	7.1
Contact with bodily fluids	2.3
Blood transfusion	3.2
Broken skin	.2
Homosexuals (not specified further)	.4
Unknown partners	.2
Immoral living	.1
Unsafe sex	1.5
Food	.1
Poor Hygiene	.1
All others	.6
Don't know	3.7
Total	100.0

TABLE 2.3
Responses to the question "Are there some individuals [or groups] who are more likely to become infected with the AIDS virus?"

	Question refers to	
	Individuals (percentage)	Groups or individuals (percentage)
Yes, some more likely to be infected	79.5	83.5
No	12.3	8.6
Don't know, would not say	8.2	7.9
Total	100.0	100.0

FIGURE 2.3
Are some individuals/groups more likely to become HIV-infected?



small percentage of respondents referred to sexual orientation in answer to the previous question about HIV transmission suggests that respondents who say that gay men are at greater risk recognize that HIV infection is spread by sexual activity and injection drugs.

The results so far may be summarized as follows: a) although virtually all Canadians say they have heard of AIDS, about 10 percent are unable to say what AIDS is, how it is transmitted, and who is at risk; b) Canadians generally think of AIDS in medical terms, as a particular illness, or in terms of its severity, not as a disease affecting any particular group or groups; c) most Canadians think of AIDS as a sexually transmitted disease; d) in defining AIDS and describing its transmission, fewer than 10 percent refer initially to gay men or sexual orientation; e) gay men are identified by about half the population as having been the most affected sector of the population, and about one-third of Canadians refer to the risk of AIDS in terms of activities, primarily sexual relations and the use of injection drugs.

Factual Knowledge of AIDS

A direct assessment of public knowledge of AIDS is provided by two sets of items in the questionnaire, one including more general questions and the other dealing with the effectiveness of different methods of preventing the transmission of HIV infection (see Tables 2.4 and 2.5 respectively). Before these questions were asked, half of the respondents (selected randomly) were told, "If you are not sure of the answer to any of these questions, just let me know and we'll go on to the next one." This experimental manipulation of the questionnaire had very little effect on the responses. Encouraging respondents to skip questions to which they did not know the answer increased the non-response by between 1 and 3 percent, depending on the question. In surveys of the general public on other topics, it is not unusual to find an increase in non-response of between 5 and 25 percent when respondents are encouraged to say that they do not know the answer to a question. That the extent of non-response is nearly unchanged for these questions indicates that people are aware of and have thought about AIDS. It also implies that erroneous answers represent real *mis*information, rather than wild guesses by people who have not thought about the subject.

On the whole, levels of public information are quite high, but the answers to these questions reveal some important gaps in public information.[1] Depending on the question, between 70 and 93 percent of the answers were correct. Notable gaps in public knowledge were found in responses to these questions:

- "Can a person become infected with the AIDS virus by donating blood?" 26 percent said yes and 4 percent did not know.
- "Can a person become infected by eating food prepared by someone who is infected with the AIDS virus?" 8 percent said yes and 12 percent did not know.
- "Can a person who has the AIDS virus pass it on to someone else, even though the infected person

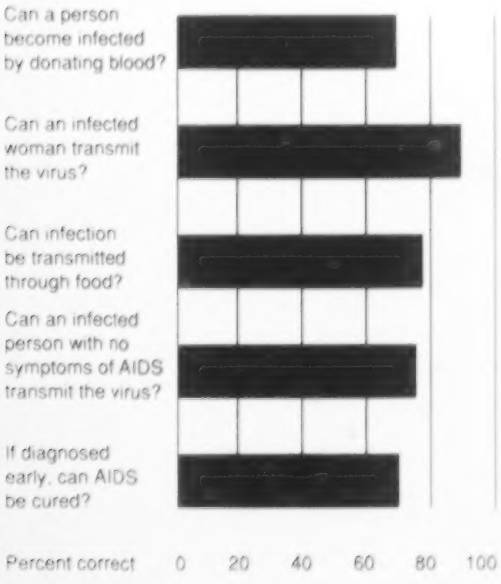
TABLE 2.4
Responses to the question "Which individuals or groups] are more likely to become infected with the AIDS virus?" for respondents who say that some individuals [or groups] are more likely to become infected

	Question refers to:	
	Individuals (percentage)	Groups or individuals (percentage)
Homosexuals, gays, gay men	46.8	62.5
People who are promiscuous	15.2	8.7
Sexually active people	2.4	2.4
People practicing unsafe sex	1.6	.6
Prostitutes	2.1	2.2
Haitians, hispanics	.5	1.6
Users of intravenous drugs	16.9	10.9
People requiring blood transfusions	3.0	1.0
Children of infected mothers	.9	.9
Men	1.7	.3
Teenagers	.7	1.9
Unmarried people	.6	.4
Unhealthy people	4.0	.9
All others	2.2	3.2
Don't know	1.4	1.4
Total	100.0	100.0

TABLE 2.5
Knowledge about AIDS and HIV transmission

Question about transmission	Responses (percentage)				
	Yes	No	Don't know	Depends	Total
Can a person become infected with the AIDS virus by donating blood?	25.5	70.2	4.3	0.0	100.0
Can a woman who is infected with the AIDS virus transmit the virus to a man with whom she has sex?	90.8	1.5	5.9	1.8	100.0
Can a person become infected by eating food prepared by someone who is infected with the AIDS virus?	8.3	79.9	11.8	..	100.0
Can a person who has the AIDS virus pass it on to someone else, even though the infected person has no signs or symptoms of the illness?	76.0	12.1	11.9	..	100.0
Can AIDS be cured if treated early?	10.9	70.6	18.5	..	100.0

FIGURE 2.5
Knowledge about AIDS and HIV transmission


Can a person become infected by donating blood?
Can an infected woman transmit the virus?
Can infection be transmitted through food?
Can an infected person with no symptoms of AIDS transmit the virus?
If diagnosed early, can AIDS be cured?
Percent correct
0
20
40
60
80
100

has no signs or symptoms of the illness?" 12 percent said no and 12 percent did not know.
- "Can AIDS be cured if treated early?" 11 percent said yes and 19 percent did not know.

Regarding methods of preventing the spread of HIV infection, about 90 percent of the respondents gave correct assessments of the effectiveness of birth-control pills, condoms, not having intercourse, and having "one partner in a long-term relationship." Knowledge about two other methods was not as good. Using a diaphragm and washing one's genitals after sex were both rated very or somewhat effective by 15 percent of the sample; another 14 percent did not know if a diaphragm was effective, and 7 percent did not know if washing was effective.

Instead of a lack of or misinformation, wrong answers to these questions might result from respondents' difficulties in hearing or understanding the questions, from errors of interviewers, or from ambiguities in the wording of the items. Methodological studies have shown that some such "measurement error" is inevitable in surveys.[2] In the case of the question about blood donation, for example, it is possible that respondents thought the reference was to receiving a transfusion.

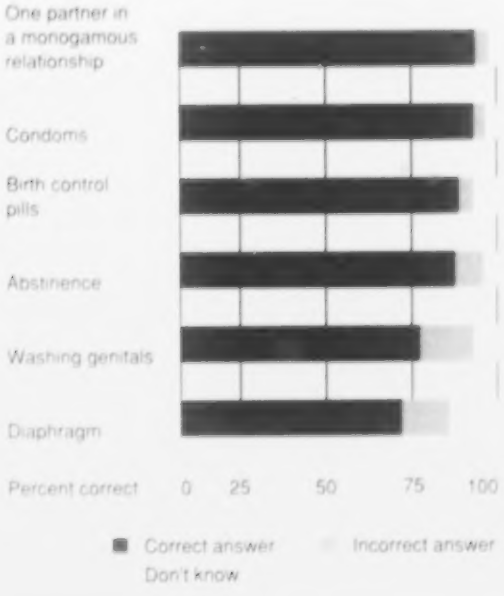
The extent of measurement error may be determined by examining the correlations among the questions about AIDS. If the questions are reliable, respondents who answer one question correctly will be more likely to answer the others correctly. Such an analysis provides strong evidence that these questions are reliable indicators of respondents' knowledge of AIDS. This conclusion is confirmed by the finding that giving an incorrect answer to a question was strongly associated with being unable to answer the one or more of the three open-ended questions about AIDS at the beginning of the questionnaire.

While the average level of public knowledge about AIDS is fairly high, serious misconceptions are not uncommon. That about one-quarter of Canadians believe that donating blood is not safe, for example, is cause for concern. Similarly, it is worrisome that 24 percent of Canadians do not know that AIDS can be transmitted by healthy carriers of the virus and that it cannot be cured, and about an equal number are falsely optimistic about the effectiveness of the diaphragm and washing one's genitals after sex for preventing HIV transmission. This misinformation could lead some people to avoid taking the measures they should to protect themselves, while others might take what are actually ineffective measures.

TABLE 2.6
Knowledge about the effectiveness or various methods to prevent HIV transmission

Method of preventing the transmission of AIDS	Rating of effectiveness (percentage)				
	Very effective	Somewhat effective	Not effective at all	Don't know	Total
Birth control pills	1.6	3.0	90.2	5.2	100.0
Condoms	40.5	53.9	3.1	2.5	100.0
Diaphragm	1.7	13.3	70.8	14.2	100.0
Washing genitals after sex	3.5	11.5	78.5	6.5	100.0
Not having intercourse	77.5	11.8	7.3	3.4	100.0
One partner in a long-term relationship	81.0	14.2	3.0	1.8	100.0

FIGURE 2.6
Knowledge about the effectiveness or various methods to prevent HIV transmission



Who Is, and Who Is Not, Well Informed about AIDS

We turn now to an examination of the factors associated with different levels of knowledge about AIDS. Again, it is worth differentiating between two consequences of misinformation about AIDS. Regardless of which particular groups are better or worse informed, misinformation impedes and lowers the quality of public discussion of these issues. The threat to individuals is more concrete: misinformation is the potential source of serious, avoidable risk of HIV infection. Here the characteristics of individuals who are misinformed are much more important.

In the following examination of knowledge about AIDS, the "predictor" variables are divided into five categories: demographic variables, including sex, age, and marital and parental status; socio-economic variables, including education, income, labour-force status, and occupation; cultural variables, in this case, ethnicity and religion; location, measured by region and size of community; and measures of social contact with a person with AIDS and with homosexuals. Combining these variables, we hope to identify groups with more and less knowledge about AIDS and to determine how large the inter-group differences are.

In developing a model of knowledge about AIDS, we need to consider three different factors. First, we can predict that information about AIDS will be greater among individuals with a personal stake in AIDS – that is, individuals who see themselves as vulnerable to HIV infection and/or whose friends and associates are vulnerable because of the use of injection drugs, sexual practices, and use of blood products. In the analysis in this chapter, vulnerability is conceived of in behavioural terms – as membership in the demographic groups at greatest risk. Of course, behaviour, not membership in groups, determines the risk of exposure to HIV infection. The survey also includes direct measures of these practices, and the next chapter gives these results. That chapter also includes a more detailed discussion of the relationship between knowledge and practices.

Second, we can predict that knowledge about AIDS will be higher among individuals who, in general, have a higher level of literacy and greater knowledge about health and current events. There is a great deal of evidence that socio-economic status is correlated with literacy and knowledge of this kind. The strongest socio-economic correlation of knowledge about AIDS should be education, but it also seems likely that individuals with higher-status occupations and with greater income will be more knowledgeable. Third, we predict that cultural and institutional factors have some impact on knowledge. Here there is little in the way of previous research to provide specific predictions, so ethnic and religious differences are explored without a previous hypothesis. The same is true of regional and community-size differences. Because the most active AIDS-prevention programs are in large Canadian cities, notably Montreal, Toronto, and Vancouver, knowledge about AIDS should be highest there. Although there are not sufficient numbers of respondents in these particular cities to examine them alone, it seems reasonable to predict that knowledge would be greatest in larger cities and in the highly urbanized provinces.

The translation of theory into concrete prediction is not entirely straightforward. In some cases, particular groups are the subject of contradictory influences. For example, at present in Canada men overwhelmingly outnumber women in the numbers of reported cases of AIDS, and presumably in levels of HIV infection – which suggests that men should know more about AIDS than women; but women also have somewhat higher levels of literacy – which suggests the opposite. The critical question, then, is whether one of these effects is much larger than the other or whether they approximately cancel each other out. Thus, a significant limitation of the theoretical predictions is that, even when it is possible to predict the direction of these influences with some confidence, it is not possible to predict their relative *magnitudes*.

In order to examine inter-group differences, it is

helpful to have a single summary measure of knowledge about AIDS. The individual questionnaire items discussed in Tables 2.4 and 2.5 are all valid *indicators* of an individual's knowledge about AIDS, but each has some degree of measurement error. Some respondents who do not know the correct answer will guess correctly, while other respondents who know the answer will, through carelessness or because they did not hear the question correctly, give wrong answers. The solution to this problem is to create an additive index that combines the individual answers into an index.[3] Such an index was created by giving one point for each correct answer to nine of the questions described in Tables 2.5 and 2.6.[4] The resulting index of knowledge about AIDS ranged from zero, assigned to respondents who did not know the answer to any of the questions, to nine for respondents with all nine correct answers.

Nine percent of the respondents were unable to answer half of the questions correctly. This figure is very close to the percentage of respondents who could not answer each of the initial open-ended questions about AIDS and the transmission of HIV infection. In addition to this very poorly informed group, another 22 percent of the sample, who answered only five or six out of nine questions correctly, can be classified as rather poorly informed. About two-thirds of the respondents gave seven or more correct answers; 18 percent had seven correct; 26 percent had eight correct, and 25 percent had nine correct.

The following analysis begins with summaries of the effect of each variable on knowledge about AIDS. These results are in Tables 2.7 to 2.10 and the accompanying Figures 2.7A to 2.10B. In the Figures, respondents with less than 5 out of 9 correct answers are scored "low," those with 5, 6, or 7 correct are scored "medium," and those with 8 or 9 are scored "high" in knowledge about AIDS. Because the various predictors of knowledge are strongly interrelated, the analysis concludes with a discussion of the results of a multiple regression analysis that separates their effects.

Demographic Differences in Knowledge about AIDS

Among the demographic variables (see Table 2.7), age has the strongest impact on knowledge about AIDS. As age increases, knowledge drops steadily. Only 6 percent of 18- to 24-year-olds had fewer than five correct answers and 60 percent had eight or nine correct; in contrast, one in four respondents 65 years of age or older had fewer than five correct answers, and only about one-third had eight or nine correct. Although the youngest age group is the most knowledgeable, the differences among 18- to 44-year-olds are quite small; 45- to 54-year-olds are somewhat less knowledgeable; and 55- to 64-year-olds, and especially those 65 or older, have relatively little knowledge about AIDS. Among respondents under 45, just over 5 percent have very little knowledge; another approximately 20 percent (who score five or six out of nine) have what could be described as marginal levels of information.

There is almost no difference in the knowledge levels of women and men, but marital status has a strong effect. As might be predicted from the relationship between age and knowledge, widows and widowers have the lowest levels of knowledge; individuals who have never married are the most knowledgeable; and married, separated, and divorced people are in between. The obvious question, which is taken up below, is whether these effects of marital status on knowledge are the result of differences in the average ages of respondents with different marital statuses.

The two lower panels of Table 2.7 show that there is little difference in the knowledge levels of individuals with and without children, between parents with different numbers of children, or between parents whose children are of different ages. There is no evidence that the parents of teenagers are unusually well informed about AIDS; their levels of information are very close to the average for the entire population. These findings suggest that many parents do not have the knowledge they need to teach their children about AIDS and how to avoid HIV infection.

TABLE 2.7
Knowledge about AIDS, by age, gender, marital status, and presence and age of children

Category	Knowledge about AIDS Number of correct answers out of nine (percentage)						Number of cases
	0–4	5–6	7	8	9	Total	
Total	9	22	18	26	25	100	1253
GENDER							
Male	10	24	19	25	22	100	581
Female	9	20	17	27	27	100	672
AGE							
18–24	6	19	15	26	34	100	216
25–34	5	18	19	29	29	100	341
35–44	7	18	21	29	25	100	269
45–54	11	22	14	25	28	100	150
55–64	12	35	17	24	12	100	123
65 or more	25	28	18	21	8	100	144
MARITAL STATUS							
Married or with partner	10	22	18	27	23	100	846
Separated or divorced	4	21	18	32	25	100	78
Widowed	28	25	17	14	16	100	50
Never Married	7	20	17	25	31	100	276
NUMBER OF CHILDREN							
None	8	20	16	26	30	100	447
One or more, none at home	16	27	18	24	15	100	265
One	7	25	20	23	25	100	198
Two	6	19	21	28	26	100	241
Three or more	13	16	15	37	19	100	101
For respondents with one or more children at home							
AGE OF OLDEST CHILD AT HOME							
Less than 5	6	25	19	20	30	100	99
5–9	4	19	26	31	20	100	117
10–14	7	19	17	31	26	100	198
15 or more	11	22	19	26	22	100	210

FIGURE 2.7A
Knowledge about AIDS, by age and gender

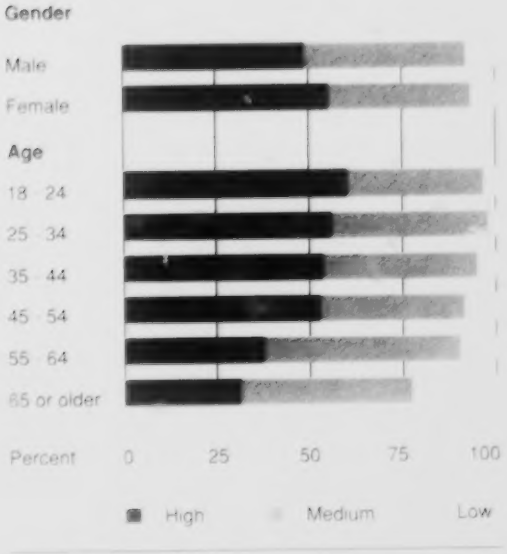
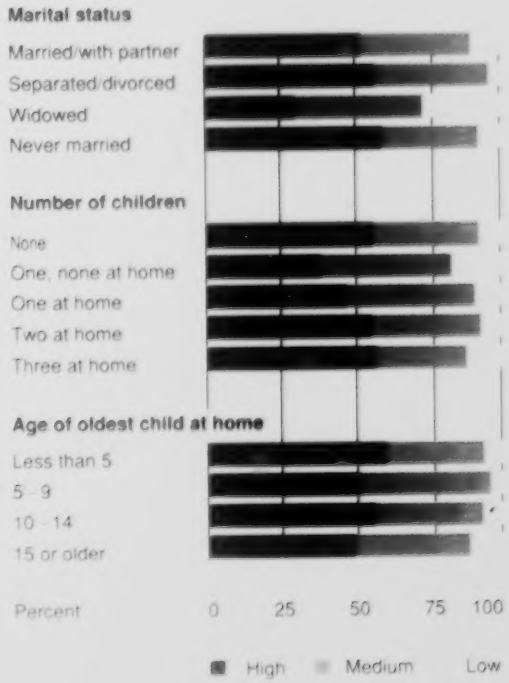


FIGURE 2.7B
Knowledge about AIDS, by marital status and presence and age of children



Socio-Economic Status and Knowledge about AIDS

Table 2.8 shows that all three indicators of socio-economic status, education, income, and occupation, affect knowledge about AIDS. Generally, respondents with more education, higher family income, and higher occupational status are more knowledgeable. The differences among individuals with different levels of education are particularly large: among Canadians who had not attended high school, only 9 percent answered all nine questions correctly; 25 percent answered fewer than half correctly, and 39 percent had five or six correct. Among respondents with some university education (but not necessarily a university degree), more than a third answered all the questions correctly; only about 2 percent answered fewer than five correctly, and about 15 percent got five or six correct. While knowledge about AIDS increases steadily as education rises, the important divisions are among four categories: respondents who had not attended high school; those who had attended but not completed high school; high school, technical, and college graduates; and those with at least some university education.

The proportion of respondents with fewer than five correct answers falls from 19 percent for respondents with under $20,000 in household income to 9 percent for respondents with $20,000 to $29,000 in income, to about 5 percent for those with household income of $30,000 or less. Respondents who did not know their household income (even in very gross categories) and refused to give their income, each accounting for around 5 percent of the population, were also characterized by very low levels of information. Managers, professionals, and students were most knowledgeable, while retired people, farmers, and semi- and unskilled manual workers were least informed. Skilled manual workers and foremen as well as semi- and low-skilled manual workers were significantly less knowledgeable than semi- and low-skilled workers in clerical and service occupations.

Because education has a very strong effect on knowledge and because respondents with more education have higher-status jobs and higher incomes, it is possible that the impact of occupation and income is entirely or partly the result of educational differences. The regression analysis described at the end of this chapter allows the effects of these variables to be isolated.

TABLE 2.8
Knowledge about AIDS, by education, household income, occupation, and labour force status

Category	Knowledge about AIDS Number of correct answers out of nine (percentage)						Number of cases
	0–4	5–6	7	8	9	Total	
EDUCATION							
Elementary only	25	39	14	13	9	100	97
Some high school	16	28	16	24	16	100	306
High school graduate	6	24	19	29	22	100	308
Technical, college	7	16	18	29	30	100	236
Some university	1	16	22	27	34	100	114
University graduate	3	11	18	29	39	100	186
HOUSEHOLD INCOME							
Under $20,000	19	30	15	21	15	100	229
$20–29,000	9	25	17	30	19	100	182
$30–49,000	6	21	20	26	27	100	356
$50–69,000	4	15	16	32	33	100	213
$70,000 or more	4	12	22	21	41	100	154
Don't know	17	29	6	41	7	100	53
Refused to say	14	30	24	19	13	100	67
OCCUPATION AND LABOUR FORCE STATUS							
Professionals	2	17	18	24	39	100	91
Managers	3	12	19	25	41	100	68
Semi-professionals	5	13	24	24	34	100	89
Skilled clerical, supervisor	2	17	16	34	31	100	110
Skilled craft, supervisor	9	36	15	24	16	100	101
Semi-skilled clerical	9	17	19	29	26	100	168
Semi-skilled manual	16	35	12	19	18	100	140
Farmers, farm labourers	18	28	23	10	21	100	21
Unemployed	8	24	20	24	24	100	62
Student	4	18	16	25	37	100	81
Retired	20	29	19	24	8	100	153
Not in paid labour force	11	23	20	23	23	100	168

FIGURE 2.8A
Knowledge about AIDS, by education

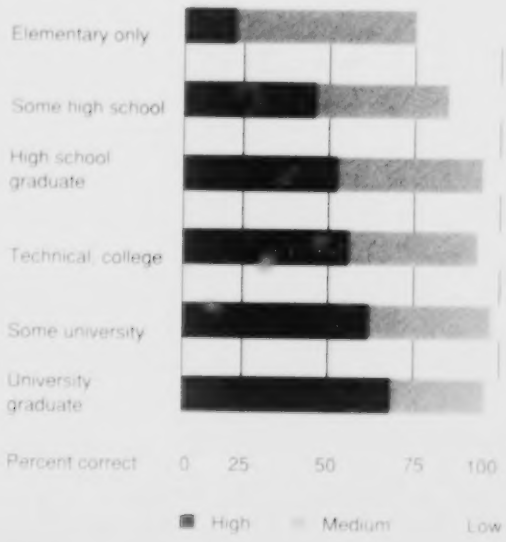


FIGURE 2.8B
Knowledge about AIDS, by household income

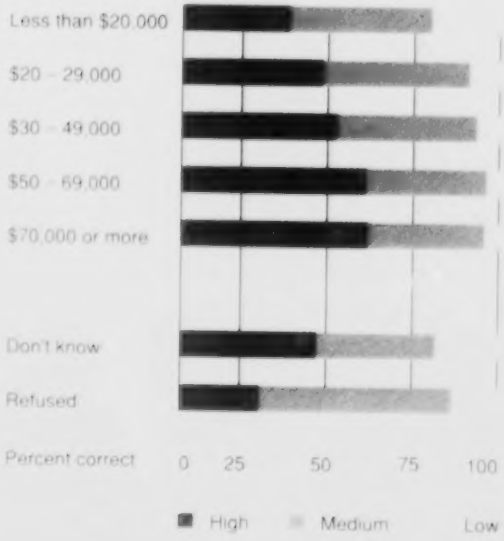
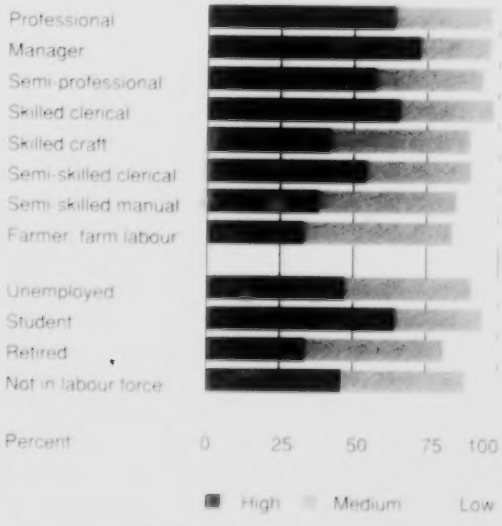


FIGURE 2.8C
Knowledge about AIDS, by occupation and labour force status



Cultural Differences

As Table 2.9 shows, there are moderate differences in knowledge among ethnic groups.[5] The largest such difference, however, between the French and all other groups, cannot – because of the predominance of French Canadians in Quebec – be distinguished from the impact of region. While ethnicity and region are conceptually distinct, in a sample of the size used here there are not enough British Quebeckers or French Canadians outside Quebec to distinguish their effects empirically. Also notable is the lower level of information among Canadians of non-European origin.[6] Unfortunately, this category accounts for only about 8 percent of the sample and includes many different groups: Asians, South and Central Americans, Africans, East Indians and Pakistanis, and native Canadians. It is possible that there are large differences among these groups. While the results suggest that attention be paid to the distinct needs of these ethnic groups, this study does not provide sufficient information about individual groups to serve as a basis for the planning of educational programs.

The differences among religious groups were rather small. Protestants and respondents with no religion were somewhat more knowledgeable than Catholics and people whose religion was neither Protestant nor Catholic. The interpretation of these findings is problematic because religion is correlated with region (most people in Quebec are both French and Catholic) and with ethnicity (the non-Europeans are disproportionately neither Protestant nor Catholic). A multiple regression analysis, described below, permits these effects to be separated.

Religious observance also has a small effect on knowledge about AIDS. About 15 percent of the respondents who attend religious services at least once a month are unable to give five or more correct answers to the nine questions, compared to about 6 percent of the respondents who attend less frequently or not at all. Because attendance at religious services is correlated with other variables, its effect must also be examined in a multivariate context.

FIGURE 2.9A
Knowledge about AIDS, by ethnic group

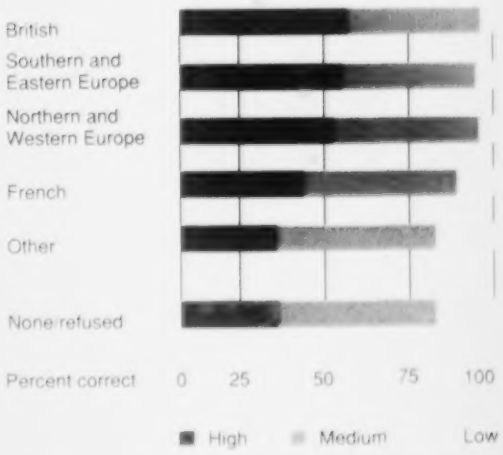


FIGURE 2.9B
Knowledge about AIDS, by religion and attendance at religious services

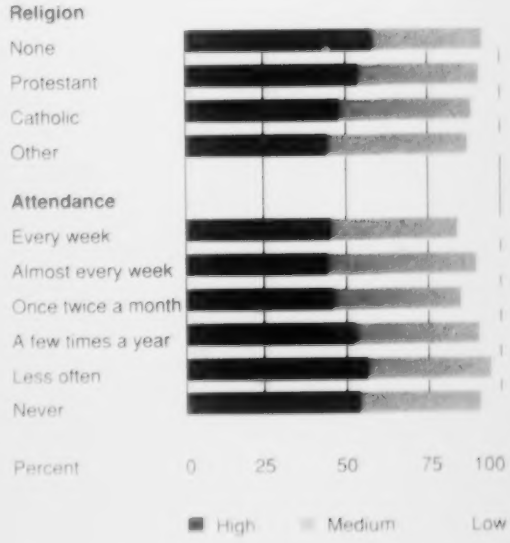


TABLE 2.9
Knowledge about AIDS, by ethnic group, religion, and attendance at religious services

Category	Knowledge about AIDS: Number of correct answers out of nine (percentage)						Number of cases
	0–4	5–6	7	8	9	Total	
ETHNIC GROUP							
British	6	19	16	29	30	100	474
French	12	26	19	27	16	100	256
Northern, Western Europe	7	21	18	29	25	100	221
Southern, Eastern Europe	8	16	17	21	38	100	86
Others	17	28	19	15	21	100	100
None given, refused	16	25	22	22	15	100	113
RELIGION							
None	3	10	20	33	34	100	131
Protestant	8	20	19	25	28	100	476
Catholic	12	25	16	27	20	100	575
Other	11	28	19	21	21	100	61
For respondents with some religion							
FREQUENCY OF ATTENDANCE AT RELIGIOUS SERVICES							
Every week	16	25	14	23	22	100	216
Almost every week	12	31	14	19	24	100	84
Once or twice a month	15	22	18	23	22	100	139
A few times a year	8	20	21	28	23	100	351
Less often	4	25	15	29	27	100	129
Never	7	21	19	28	25	100	180

Region and Community Size

Both region and community size affect levels of knowledge about AIDS. Limitations in the sample size prevented an examination of each province separately, so in Table 2.10 the four Atlantic provinces are combined, as are Manitoba and Saskatchewan. Levels of information are highest in Ontario and Alberta, where close to a third of the respondents answered all nine questions correctly and around 5 percent had fewer than five correct. Knowledge was marginally lower in British Columbia and Manitoba and Saskatchewan, and somewhat lower in Atlantic Canada and Quebec. There is always a concern that errors in translation might be responsible for differences between Quebec (where about 90 percent of the interviews were in French) and English Canada (where more than 96 percent of the interviews were in English), but the care taken with these translations and the fact that the questions are very direct and concrete both argue strongly against the possibility that our estimate of levels of knowledge about AIDS in Quebec is the result of bias. Community size has a weak effect on knowledge, which is somewhat greater in larger centres than in rural areas and small towns.

FIGURE 2.10A
Knowledge about AIDS, by region and community size

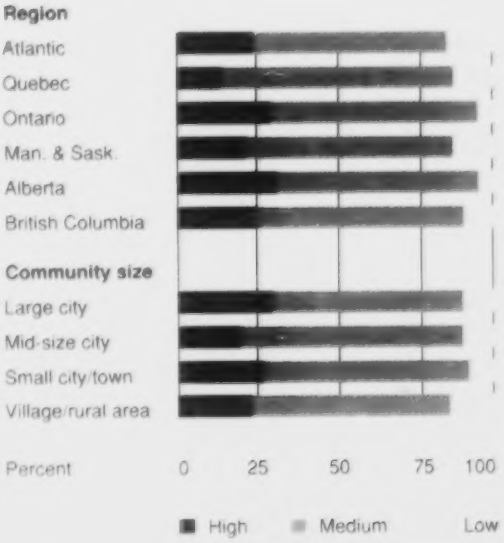


FIGURE 2.10B
Knowledge about AIDS, by whether respondent knows person with AIDS and person who is a homosexual

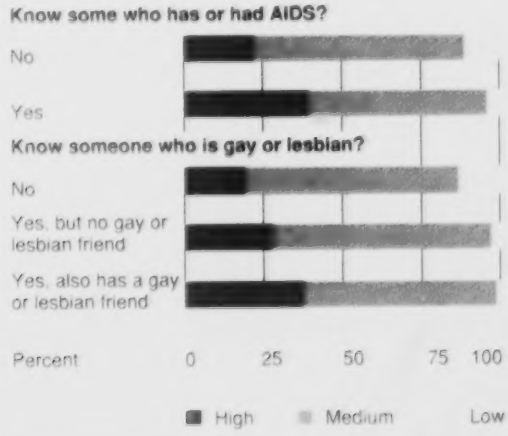


TABLE 2.10
Knowledge about AIDS, by region and community size, whether respondent knows or knew someone with AIDS, and knows or is friends with a homosexual

Category	Knowledge about AIDS Number of correct answers out of nine (percentage) 0–4	5–6	7	8	9	Total	Number of cases
REGION							
Atlantic	15	22	17	22	24	100	140
Quebec	12	29	22	23	14	100	278
Ontario	6	21	16	27	30	100	466
Manitoba-Saskatchewan	13	17	16	32	22	100	102
Alberta	5	20	16	28	31	100	123
BC	8	20	20	27	25	100	144
SIZE OF COMMUNITY							
Large city	9	18	17	28	28	100	341
Mid-size city	9	25	16	30	20	100	291
Small city or town	8	20	20	26	26	100	380
Village or rural area	12	28	17	21	22	100	239
KNOW SOMEONE WHO HAS OR HAD AIDS?							
No	10	23	18	26	23	100	1139
Yes	4	13	16	26	41	100	99
KNOW SOMEONE WHO IS GAY OR LESBIAN?							
No	13	26	16	25	20	100	745
Yes, but has no friend who is gay or lesbian	4	20	23	26	27	100	274
Yes, also has a gay or lesbian friend	3	12	16	31	38	100	222

Social Contact

Among the hypothesized predictors of knowledge about AIDS were some more direct indicators of social networks, in particular questions about whether the respondent knew or had known a person with AIDS and whether she or he knew or had as a friend someone who was homosexual. Both measures had strong effects on knowledge. Eight percent of the respondents reported that they knew someone with AIDS. Of this group, 41 percent answered all nine questions correctly, compared to 23 percent of all other respondents. Similarly, respondents who did not know anyone who was gay or lesbian answered all the questions correctly 20 percent of the time, compared to 27 percent for respondents who knew a gay man or lesbian but did not have one as a friend, and 38 percent for respondents who had a friend who was homosexual. Interestingly, 22 percent of the respondents reported that they knew a gay man or lesbian and an additional 18 percent said that they had a friend who was gay or lesbian.

Integrated Model of Knowledge of AIDS

Using multiple regression, it is possible to separate the effects of different factors on knowledge about AIDS.[7] In this analysis the focus is on the average number of correct answers given by respondents, rather than on the distribution of scores on the nine-point scale, which are discussed above.

The strongest predictor of knowledge about AIDS proved to be socio-economic status. Holding all the other variables constant, the average difference in the scores (on the nine-point scale of knowledge) between respondents with no high school and university graduates is 1.1 points, between those with less than $20,000 annual household income and those with $70,000 or more is 0.7 points, and between managers and semi- and unskilled manual workers is 0.8 points. Thus, knowledge about AIDS, like many other advantages in society, accrues disproportionately to individuals with more education and income and better jobs.

The effects of the other variables are much weaker. As the results in Table 2.9 suggest, members of non-European ethnic groups, who make up about 8 percent of the population, are significantly less knowledgeable (by 0.9 points on the scale) than members of the British ethnic group (which combines English, Scottish, and Irish respondents). The only other significant ethnic difference involves the French, who are marginally less knowledgeable than the British (even after controls for region are applied). Because the ethnic differences in knowledge about AIDS are affected by the statistical controls for education, income, religion, age, and so on, they cannot be the results of demographic and socio-economic differences between ethnic groups in Canada. Instead, they reflect cultural differences.

Religion does not have a statistically significant effect on knowledge about AIDS, but differences in religious observance do. People who attend church at least two or three times a month are on average about one-half point less knowledgeable than those who attend less often.

The network variables affect knowledge about

AIDS, even after statistical controls for the other variables are applied. Knowing someone (but not having a friend) who is gay or a lesbian increases knowledge by an average of 0.5 points on the nine-point scale, and having a friend who is gay or a lesbian increases knowledge by 0.6 points.

Still weaker, although statistically significant, are the effects of age, region, size of community, and gender. Until age sixty-five, there is a steady but slow decline in knowledge about AIDS; in addition, the group of respondents aged sixty-five or older has much less knowledge than all the younger groups. The only regional difference is that residents of Quebec are, by about one-half a point out of nine, less knowledgeable. Because of the controls introduced by the regression, the lower level of knowledge in Quebec cannot be due to the distinctive religious or ethnic composition of Quebec (or, for that matter, to its age, income, or occupational structure). There is a very weak but statistically significant tendency for people living in larger cities to have more knowledge, but the difference in average scores between large cities and rural areas and small towns is only 0.3 points out of nine. Women are marginally (by an average of 0.2 points) more knowledgeable than men. Marital status and number of children have no impact at all on knowledge about AIDS.

Roughly speaking, then, knowledge about AIDS varies across socio-economic categories much more than across geographical, demographic, life-cycle, or cultural categories. As in many other aspects of social policy, the key differences involve the interrelated educational, occupational, and economic divisions in Canadian society. There is a general tendency for knowledge to increase steadily for each subsequent category of these variables, but the most important differences are between the lowest categories of education, occupation, and income and all the other categories taken together. In this sense, the problem for AIDS educators is much like that confronting policy-makers in other areas: to reach the most disadvantaged.

Conclusion

Most Canadians understand the problems of AIDS in terms of its threat to health and as a sexually transmitted disease. Relatively few people think of it primarily in terms of the communities affected. This is positive. For individuals, understanding that AIDS has clear behavioural causes is a prerequisite to avoiding infection; it also lessens the risk that groups will be scapegoated.

Canadians are relatively well informed about AIDS, but there are large enough gaps in public knowledge to argue for continuing educational programs. Interpreting these findings would be easier if there were some comparative data on public knowledge about other aspects of health. It would be astonishing to find that the great majority of Canadians scored nine out of nine on the scale of knowledge about AIDS, but what would constitute a "high" level of information is more difficult to say. Still, our finding that half the Canadian population gets eight or nine correct answers supports the conclusion that overall levels of information are high. The consequences of HIV infection are so serious, however, that misinformation among a very small percentage of the sample represents a serious public health threat.

Knowledge about AIDS is not spread equally through the population. Clearly, the group at greatest risk is made up of poorly educated, poorer, unmarried young people. Although younger people know more about AIDS, the least-educated and poorest young people have significantly less information than their better-educated, better-off counterparts. Other differences among population groups are smaller, but large enough to suggest efforts to remedy them. There is the hint – but the nature of the sample makes it difficult to say more – that non-European ethnic and religious groups have less knowledge than Canadians of European background. Knowledge levels are somewhat lower in Quebec and Atlantic Canada than in Ontario and the west. In Atlantic Canada, the difference is largely a

result of demographic and socio-economic factors, but these factors cannot account for the somewhat lower levels of knowledge in Quebec.

3 Behaviour Involving Risk of HIV Infection

Critical to preventing the spread of HIV infection are efforts to alter sexual practices and stop the sharing of needles by injection drug users. The survey questions devoted to measuring the extent of this behaviour are discussed in this chapter, along with respondents' reports on changes in behaviour in response to the risk of HIV infection. Also examined is the critical relationship between risk and knowledge of AIDS.

The present study is not a substitute for a full-scale effort to deal with behaviour involving risk of HIV infection. The survey data discussed here suffer from two limitations: first, there are not enough questions about behaviour, because of the need to gather information on a number of other topics; and second, a representative sample of the population includes too small a proportion of respondents at high risk to serve as an efficient vehicle for studying these individuals. Any larger-scale effort to gather data on risk should be guided by an explicit model of health-related behaviour and behavioural change.[1]

The principal limitation on the content of the present survey involves the limited measurement of the activities that entail risk. Respondents were asked if they had ever shared a needle used to inject drugs; how many sexual partners they had had in the previous five years and the sex of their partners; whether they had had unprotected intercourse with "someone who [they] thought might be a carrier of the AIDS virus" or with "someone [they] did not know very well" in the previous five years; and whether they had changed their behaviour in order to avoid infection. Although a great improvement over what is currently known, these questions do not provide precise estimates of individual risk; that would require more precise measurement of the frequency of sexual contacts, the number of partners, and the form of sexual practices.

Before examining these data, it is worth commenting briefly on the extent of risk of HIV infection from sexual contact. The Canadian AIDS Society's *Safer Sex Guidelines: A Resource Document for Educators and Counsellors*[2] notes:

> Despite the popular notion that having multiple sexual partners is itself contributory to HIV transmission, we consider types of sexual activity more significant than the number of different partners an individual has. What is far more significant than multiple partners is *multiple exposures to infection* (p. 17, emphasis in original).

The assumption here is that infection is what is known statistically as a "poisson process," in which the overall probability of exposure to infection is simply the result of compounding the probabilities of all events that may cause infection, and that the risk is the same for events with the same or with different partners. Reviewing the recent epidemiological evidence, however, May, Anderson, and Blower[3] argue that the risk of transmission is only weakly related to the number of exposures to infection but is strongly related to the number of different partners. Obviously there can be no

argument that the critical educational imperative is to diminish the practice of unprotected sex. Not fully resolved, however, is how much emphasis should be placed on the number of partners.

In interpreting these results, it is important to distinguish the probability of individual risk from the overall extent of risk in the population: relatively small *proportions* of the Canadian population correspond to large *numbers* of individuals. For each 1 percent of the population engaging in unsafe sex or sharing needles, *nearly one-quarter of a million* people are at risk of HIV infection. This is a staggeringly large number, when that risk involves a virus that eventually leads to the development of a deadly illness, at an age when most people experience very good health.

Prevalence of Needle Sharing by Injection Drug Users

The first question in this section asked "Have you ever injected yourself with drugs using a needle shared with someone else?" Of the 1253 respondents, 16, or 1.3 percent, answered yes (and one respondent would not say). In terms of the population as a whole, this leads to an estimate that approximately 235,000 people have shared a needle. Unfortunately, the number of respondents who reported having shared a needle is far too small to allow their characteristics – age, location, and so on – to be determined with any precision.

Sexual Practices

First, respondents were asked how many sexual partners they had had in the previous five years and their sex. The interval of five years was chosen because that is a reasonable estimate of how long HIV infection has been significantly prevalent.[4]

A total of 5 percent of men and 13 percent of women reported that they had not had a sexual partner in the previous five years, and 54 percent of men and 69 percent of women reported having one partner. By a ratio of 35 percent to 14 percent, men were more likely than women to have had two or more sexual partners in the previous five years. Of the respondents with two or more partners, about three-quarters of the men and half the women had had three or more partners, and about 40 percent of the men and 15 percent of the women had six or more partners. Five percent of the men and 3.6 percent of the women would not disclose the number of sexual partners and were asked no further questions in this section.

In terms of sexual orientation, 0.7 percent of the men indicated that they had had only male sexual partners in the previous five years, and another 0.9 percent indicated that they had had partners of both sexes; only 0.3 percent of women indicated that they had had only female partners, and 0.1 percent had had partners of both sexes.

The reports of numbers of partners for women and men cannot both be correct. The *distributions* of numbers of partners of women and men need not be identical (for example, a small proportion of women could account for a much larger proportion of all women's partnerships than the same proportion of men). The *numbers* of heterosexual relationships reported by women and men, however, must be equal, to within sampling error. Commenting on the similar findings of a number of previous surveys, May, Anderson, and Blower[5] remark:

> These figures illustrate a problem that is common to essentially all such studies, namely that men report a significantly higher average number of partners than do women. This clearly cannot be the case. The extent to

TABLE 3.1
Number and gender of sexual partners, by gender of respondent

Number and gender of sexual partners	Men (percentage)	Women (percentage)
No partner	5.6	13.3
One partner of the opposite sex		
Married	49.0	57.2
Not married	4.8	11.4
Total	53.8	68.6
One partner of the same sex	.2	.2
Two or more partners, all of the opposite sex		
2 partners	7.9	6.8
3–5 partners	11.7	4.8
6–10 partners	6.7	.8
11 or more partners	5.6	.2
Don't know how many	1.7	1.3
Total	33.6	13.9
Two or more partners, all of the same sex	.5	.1
Two or more partners, at least one of each sex	.9	.1
Two or more partners would not disclose their sex(es)	.4	.2
Would not give number of partners	5.0	3.6
Total	100.0	100.0

TABLE 3.2
Whether respondent had sex without a condom with a person who may have been HIV infected and with someone whom he or she "did not know very well" in the last five years, by gender

	Had sex without using a condom with someone you thought might be a carrier of the AIDS virus (percentage)		Had sex without using a condom with someone you did not know very well in the last five years (percentage)	
Response	Men	Women	Men	Women
Yes	6	2	41	27
No	92	96	58	72
Don't know	2	1	0	0
Would not say	0	1	1	1
Total	100	100	100	100
Number of cases	203	93	203	95

TABLE 3.3
Whether respondent had sex without a condom with a person who may have been HIV infected and with someone he or she "did not know very well" in the previous five years, by number of partners in the last five years, by gender

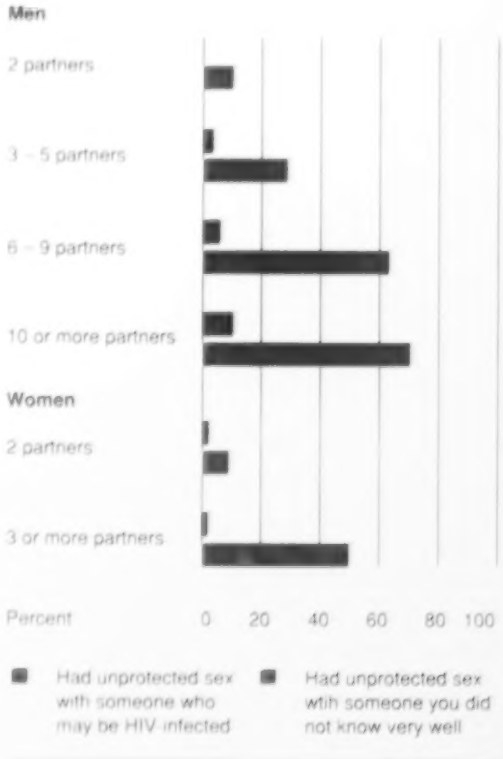
	Had sex without using a condom with someone you thought might be a carrier of the AIDS virus (percentage)		Had sex without using a condom with someone you did not know very well in the last five years (percentage)		Number of cases	
Number of partners in the last five years	Men	Women	Men	Women	Men	Women
Two	0	2	9	9	45	45
Three or more	—	4	—	45	—	42
Three to five	3	—	31	—	70	—
Six to nine	5	—	63	—	21	—
Ten or more	18	—	72	—	54	—

which the reported numbers reflect exaggeration by men, underestimation by women, or failure to capture a small, highly active fraction of the female population is usually not known.

Respondents with two or more sexual partners in the previous five years (except exclusively lesbian women) were asked about behaviour that might have placed them at risk.[6] Relatively small percentages, 6 percent of men and 2 percent of women, reported that they had "had sex without using a condom with someone [they] thought might be a carrier of the AIDS virus." In addition, 2 percent of men and 2 percent of women indicated that they did not know or would not say whether they might have had sexual contact with someone who was HIV infected. Although the percentage of men saying that they might have had such contact was small enough that it could largely reflect the behaviour of gay and bisexual men, analysis of the data showed that this was not the case. Relative to the entire adult population, between 2 and 3 percent of men thought that they might have been exposed to AIDS, compared to about 0.5 percent of women. Among individuals with two or more partners in the previous five years, 27 percent of the women and 41 percent of the men reported that they had "had sex without using a condom with someone [they] did not know very well."

An obvious question is whether respondents who report having more sexual partners are more likely to say that they have had sex with a potentially HIV-infected partner or with someone they did not know very well (remember that these two questions were asked only of people with two or more partners in the previous five years). As Table 3.3 shows, among men with two sexual partners, none reported that he had had unprotected sex with a person who might be HIV infected; the figure was 4 percent for men with between three and nine partners, and 18 percent for men with ten or more partners. The percentage of men who reported having had sex with someone they did not know very well was 9 for men with two partners, 31 for men with three to five partners, 63 for men with six to nine partners, and

FIGURE 3.3
Percent who had unprotected sex with someone who may have been HIV infected and with someone the respondent did not know very well, by number of sexual partners in the last five years



72 for men with ten or more partners. The corresponding figures for women are very similar.

The relationships between number of sexual partners and having had unprotected sex with a potential HIV carrier or with someone whom the respondent did not know well are very strong. Although some individuals with large numbers of sexual partners do not engage in unprotected sex, on average people with more partners are more likely to risk unsafe sex.

Sexually Transmitted Disease and Sexual Practices

Whether or not someone has had a sexually transmitted disease (STD) is also a good predictor of the number of partners and of the likelihood of having unprotected sex with a potentially HIV-infected person and with someone not well known to the respondent. Among the 35 percent of male respondents with two or more partners in the previous five years, 13 percent reported having had an STD. Of the men who reported having had an STD, 27 percent said they had had sex with someone who they thought might be HIV infected, or did not know whether they had done so, compared to only 5 percent of those without an STD; furthermore, 77 percent of men who had had an STD said that they had had sex with someone they did not know very well, compared to 37 percent of those who had not had an STD.

Men who had had an STD had also had more sexual partners: 53 percent had had six or more partners in the previous five years and 40 percent ten or more; for men without an STD, 35 percent had six or more partners and 24 percent had ten or more in the previous five years. Because the *number* of male survey respondents who reported having had an STD is only twenty-six, these findings should be treated with some caution. While the results for women are fairly similar, the percentage of women who had had an STD (6 percent of women with two or more partners) is too small to justify reporting the figures.

From these figures, it is apparent that respondents who report having had an STD are more likely to engage in behaviour that puts them at risk. There is strong justification for using STD clinics to distribute AIDS educational materials and for encouraging physicians and other health practitioners who treat STDs to do the same.

Predictors of the Number of Sexual Partners and the Likelihood of Having Unprotected Sex with an Unknown Partner

Knowing that sexual practices are related to identifiable characteristics of individuals would allow AIDS education efforts to be targeted more effectively. Sexual practices are certain to be related to the demographic variables of gender, age, and marital status,[7] but the key question is whether any other variables affect sexual practices. As noted, there were too few gay, lesbian, and bisexual respondents to permit estimates of the impact of sexual orientation on sexual behaviour.

Again, Canada was divided into six regions in which the four provinces of Atlantic Canada were grouped together, as were Manitoba and Saskatchewan. Region had no statistically significant effect on sexual practices for either men or women. In all but one of the analyses, education also had no significant effect, but there was a suggestion that numbers of partners and having had a partner who was not well known to the respondent were marginally higher among high-school graduates than among Canadians with less or with more education.

Sex, age, marital status, and (for men) sexual orientation had strong effects on sexual practices, as Table 3.4 shows for men and Table 3.5 for women. These tables give the percentages of men and women with two or more, three or more, and six or more partners in the previous five years and the percentages who reported having unprotected sex with someone they did not know very well. Because marital status and age are strongly interrelated, the tables also give the "adjusted percentages" in these categories. The adjusted percentages show the differences between categories when it is assumed that the individuals in these categories are alike in other respects. For example, they provide a comparison of the number of sexual partners of married and unmarried men when it is assumed that the age distributions of married and unmarried people are the same.[8]

Marital status exerts the strongest effect on the reported number of sexual partners and on the likelihood of the respondent's having had sex with someone that he or she did not know well. Eleven percent of the married men, 15 percent of widowers, 89 percent of divorced and separated men, 74 percent of never-married men, and 66 percent of men living with but not married to a female partner had had two or more partners in the previous five years.

The proportion of women who reported having two or more partners was approximately half the figure for men, but the pattern of differences between categories of marital status was similar. Five percent of married women, 7 percent of widows, 40 percent of those living with but not married to male partners, 35 percent of the never married, and 24 percent of the divorced and separated women had had two or more partners in the last five years. While the size of the differences in sexual behaviour between the marital-status categories depends on which criterion is employed, the key distinction is between the far more active unmarried people and married people (combined with widows and widowers).

Age is correlated with marital status, so the smaller numbers of sexual partners of married and widowed people might result from their being older, on average, than unmarried people. The adjusted percentages in the fifth to eighth columns of Table 3.4 and the fourth to sixth columns of Table 3.5 show the differences among marital-status categories, adjusting for age. This adjustment for age, it turns out, does not significantly change estimates of the impact of marital status.

Age has a very strong impact on number of sexual partners and on whether the respondent reports having had sex with a partner whom he or she did not know very well. Table 3.4 shows that 61 percent of 18- to 24-year-old men reported having three or more partners in the previous five years, compared to 39 percent of 25- to 34-year-old men, 15 percent of 35- to 44-year-olds, 8 percent of 45- to 54-year-olds, and around 4 percent for older men. These differences are considerably reduced when marital status is taken into account. If we discount the tendency for 18- to 24-year-old men to be unmarried, the 61 percent figure is reduced to 38

TABLE 3.4
Percentage of men with two or more, three or more, and six or more sexual partners, and who had sex with someone they did not know very well, in the last five years, by age and marital status.*

	Unadjusted percentages				Percentages adjusted for all other variables				
	Number of partners			Unprotected sex with someone not well known	Number of partners			Unprotected sex with someone not well known	Number of cases
Age Marital status	2 or more	3 or more	6 or more		2 or more	3 or more	6 or more		
AGE									
18–24	79	61	27	23	57	38	17	14	94
25–34	48	39	23	28	45	36	21	26	152
35–44	19	15	8	9	24	21	11	12	115
45–54	19	8	3	5	25	18	5	9	65
55–64	15	4	3	0	29	18	9	8	61
65 or more	4	3	3	2	18	17	10	9	46
MARITAL STATUS									
Married	11	5	2	4	17	9	5	6	315
Live with partner	66	54	29	36	61	51	27	34	48
Separated, div.	89	79	50	37	94	81	51	37	23
Widowed	15	14	14	8	28	20	16	12	7
Never married	74	60	29	28	61	51	25	25	140

*The adjusted percentages include a control for sexual orientation. There are too few gay and bisexual men to justify including estimates of the effects on sexual orientation.

FIGURE 3.4A
Sexual behaviour in the last five years, by age

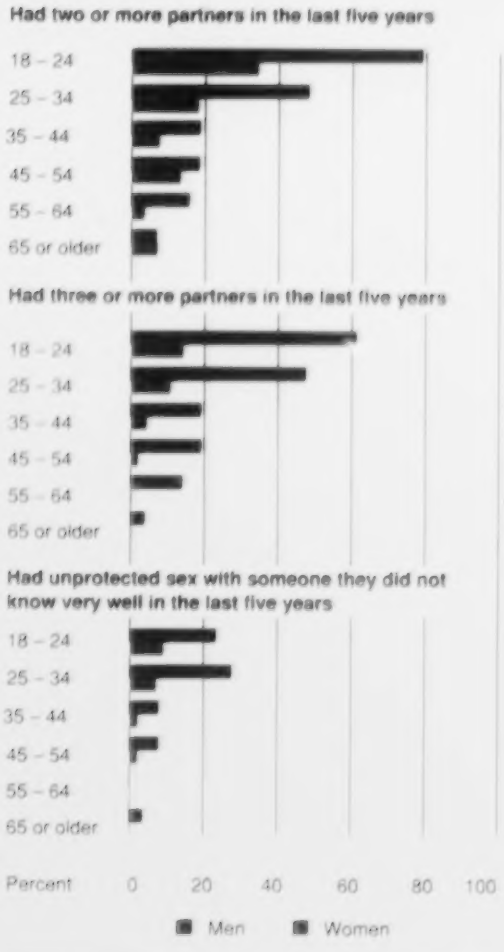


FIGURE 3.4B
Sexual behaviour in the last five years, by marital status

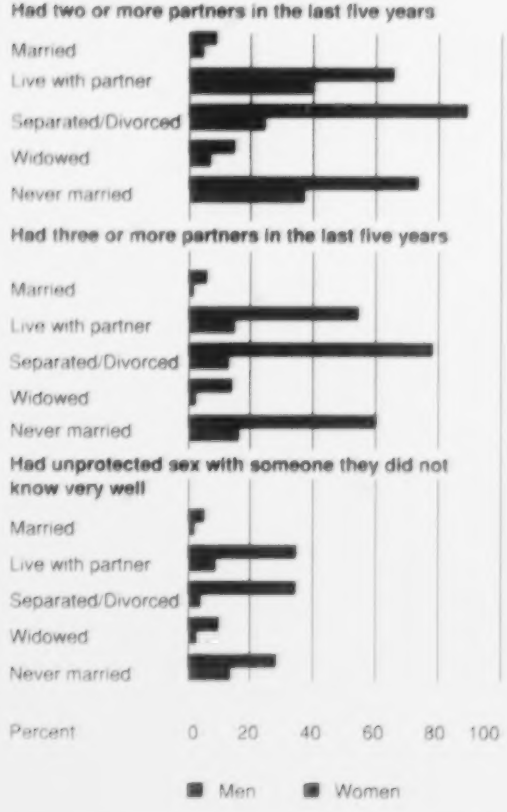


TABLE 3.5
Percentage of women with two or more and three or more sexual partners, and who had sex with someone they did not know very well, in the last five years, by age and marital status

	Unadjusted percentages			Percentages adjusted for all other variables			
	Number of partners		Unprotected sex with someone not well known	Number of partners		Unprotected sex with someone not well known	Number of cases
Age Marital status	2 or more	3 or more		2 or more	3 or more		
AGE							
18–24	34	15	10	22	8	4	102
25–34	18	10	7	19	11	7	169
35–44	7	3	1	10	5	3	136
45–54	12	1	1	0	2	2	70
55–64	2	0	0	6	2	2	78
65 or more	4	0	0	7	2	1	72
MARITAL STATUS							
Married	5	1	1	6	1	2	388
Live with partner	40	15	9	36	13	8	48
Separated, div.	24	11	3	27	13	0	46
Widowed	7	2	2	14	6	0	39
Never married	35	19	12	29	17	11	106

percent. Even holding constant marital status, men under the age of 35 are about twice as likely as those over 34 to report having had unprotected sex with someone they did not know well. Among women between 18 and 24, 15 percent had had three or more partners in the previous five years and 10 percent had had unprotected sex with someone they did not know well; for women aged 35 to 44 the corresponding figures are only 3 and 1 percent.

The key demographic variables, sex, marital status, and age, and *not* socio-economic variables or location, affect the prevalence of sexual practices that carry the risk of HIV infection. These findings suggest that efforts at behaviourial change should be focused on unmarried, younger people.

Knowledge about AIDS and Sexual Practices

It makes sense that people who know more about AIDS will exercise more caution in their sexual relationships, but this is not what Table 3.6 shows: men who are more knowledgeable about AIDS are more likely to have had two or more, three or more, and six or more partners and more likely to report having had unprotected sex with someone they did not know very well. The main difference is between respondents scoring six or less on the nine-point scale of knowledge and those scoring seven, eight, or nine. Twenty-three percent of the less knowledgeable men had had two or more partners, and 9 percent had had unprotected sex with someone they did not know very well, while nearly 40 percent of the more knowledgeable men had had two or more partners and nearly 20 percent had had unprotected sex with someone they did not know very well. For women also, greater knowledge is associated with greater risk, but the relationship is not as strong.

Because knowledge about AIDS is related to a number of different variables, including age, and because sexual practices are related to age and marital status, the positive relationship between knowledge and sexual practices might be caused by variables that affect them both. It is possible, for example, that greater knowledge is associated with riskier behaviour only because both are higher among younger people. Statistical analysis, however, showed that this was not so. When age, education, marital status, sexual orientation (for men only), and region are held constant, the positive association between knowledge and risk is not altered. In other words, even if knowledge about AIDS were unrelated to individuals' age, education, marital status, region, and sexual orientation, there would still be a tendency for people with more knowledge to take more risks. This finding – that greater knowledge is associated with *increased*, or at least not decreased, incidence of behaviour with risk of HIV infection – is consistent with many other studies of the relationship between knowledge and behaviour.[9]

Figure 3.6
Number of sexual partners, by knowledge about AIDS

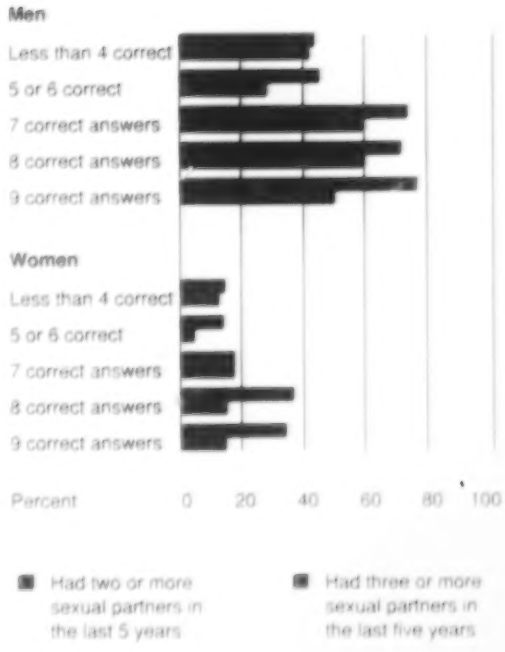


TABLE 3.6
Percentage of men and women with two or more, three or more, and (for men only) with six or more sexual partners in the last five years, and who had sex with someone they did not know very well, by knowledge about AIDS

	Men				Women				
	Number of partners (percentage)			Unprotected sex with someone not well known (percentage)	Number of partners (percentage)		Unprotected sex with someone not well known (percentage)	Number of cases	
Knowledge about AIDS (number of correct answers out of 9)	2 or more	3 or more	6 or more		2 or more	3 or more		Men	Women
Four or less	22	21	10	8	7	6	3	57	59
Five or six	23	15	6	9	7	2	1	140	134
Seven	38	30	21	16	9	9	5	111	110
Eight	37	30	15	19	18	7	6	144	182
Nine	39	27	12	18	17	7	3	125	181
Total	33	25	13	15	13	6	1	575	666

Reported Changes in Behaviour to Avoid AIDS

Respondents with two or more sexual partners in the previous five years were asked if they had "changed [their] behaviour because of the risk of becoming infected with the AIDS virus." Respondents who replied yes were then asked what changes they had made; these responses were recorded verbatim and subsequently coded into the categories shown in Table 3.7. In order to gather more detailed information about behavioural change, respondents were asked whether they had: reduced the number of sexual partners; been more cautious about whom to have sex with; ever decided not to have sex with someone because of the fear of becoming infected; and started to use or used condoms more often. The responses are shown in Table 3.8. Because this analysis is restricted to persons with two or more partners, the sample is reduced to 203 men and 95 women.

Forty-one percent of the women and 54 percent of the men with two or more partners in the previous five years reported that they had changed their sexual practices to avoid infection (another 1 percent of men and 5 percent of women indicated that they had no need to do so). Relative to the entire population (not just to individuals with two or more partners), about 16 percent of Canadian men and 7 percent of women had had two or more sexual partners in the previous five years but had *not* changed their behaviour in response to AIDS.

About one-third of the men who reported that they had not changed their behaviour had had two partners in the previous five years and another third had had three to five partners. This leaves about 5 percent of Canadian men who had had six or more sexual partners in the previous five years *and* had not changed their sexual practices to reduce the risk of infection. Three-fifths of the women who had *not* changed their behaviour had had two partners; another fifth had had three to five partners, and only one-fifth – accounting for somewhere over 1 percent of all adult women – had had six or more partners and not changed their behaviour. Of

TABLE 3.7
Responses to the question "Have you changed your behaviour because of the risk of becoming infected with the AIDS virus?" by gender

Behavioural change in response to AIDS	Men (percentage)	Women (percentage)
Yes, practiced safe sex	16	9
one partner only	10	5
more cautious	21	20
got married	3	3
remained celibate	2	2
all others	2	2
Total	54	41
No change	44	51
No, no need to change	1	5
Would not say	1	3
Total	100	100
Number of cases	203	95

TABLE 3.8
Behavioural change by respondents with two or more sexual partners in the last five years who reported some change in their practices, by gender

Question	Response	Men (percentage)	Women (percentage)
Been more cautious about who you have sex with	Yes	95	84
	No	5	15
	Total	100	100
Reduced number of sexual partners	Yes	73	67
	No	26	33
	Would not say	1	0
	Total	100	100
Has fear of AIDS ever stopped you from having sex?	Yes	41	35
	No	59	64
	Would not say	0	0
	Total	100	100
Have you started to use condoms or used them more often?	Yes	60	59
	No	40	41
	Would not say	0	0
	Total	100	100
Number of cases		112	41

FIGURE 3.8
Behavioural change to avoid HIV infection for respondents with two or more sexual partners in the last five years who reported some change in their practices

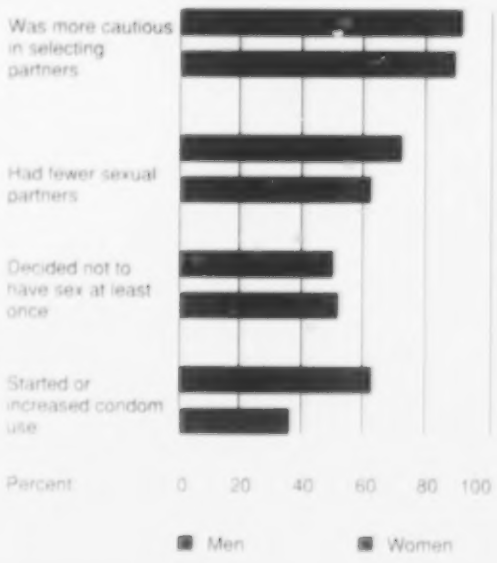


TABLE 3.9
Frequency of condom use by number of sexual partners in the last five years, by gender

	Frequency of condom use (percentage)						
Number of partners in the last five years	Every time	Almost every time	Sometimes	Seldom	Never	Total	Number of cases
MALE							
Two	24	2	18	7	54	100	44
Three to five	28	16	8	5	43	100	68
Six or more	8	16	30	6	40	100	75
Total	19	13	19	5	44	100	187
FEMALE							
Two	13	5	4	12	66	100	44
Three or more	11	6	16	10	57	100	40
Total	12	6	9	11	62	100	85

course, this behavioural change takes place in the context of men being much more likely than women to report sexual practices that expose them to HIV infection and to other sexually transmitted diseases.

Changes in sexual behaviour were more common among respondents with more sexual partners, who said that they had had sex with a person who may have been infected or who they did not know very well, and who reported having had a sexually transmitted disease. Among respondents with two or more partners in the previous five years, 28 percent of men and 21 percent of women reported that they had made some change in their behaviour; for men and women with three or more partners, 62 and 64 percent respectively reported making some change. Thirty-six percent of men who had not had an STD reported some change in behaviour, compared to 77 percent of men with an STD. Changes in sexual practices to avoid HIV infection are not, however, related to education, age, or knowledge of AIDS. The *absence* of a relationship between knowledge and risk avoidance is also well documented in previous research.[10]

Almost all the respondents who said that they had done something to reduce their risk of infection indicated that they chose their partners more carefully and said that they were more likely to take precautions when having sex, but only a very small proportion reported abstaining from sex. About 70 percent indicated that they had reduced the number of partners; around 90 percent reported that they were more cautious about their sexual partners; and 60 percent had started to use condoms or used them more often. About 40 percent said that they had, on at least one occasion, not had sex for fear of exposure to HIV infection. There are no statistically significant differences in the responses of women and men to these questions.[11]

The extent to which behavioural changes have *not* been adequate to prevent the transmission of HIV infection and other sexually transmitted diseases effectively is clear from the data, in Table 3.9, on the frequency of condom use. Again, respondents with fewer than two sexual partners in the previous five years are excluded from the analysis. Among men with two sexual partners, 24 percent reported that they use condoms every time they have sex; 54 percent never use them, and most of the remainder said that they use condoms "sometimes." For men with three to five partners, condom use appears to be slightly more frequent. Among the most sexually active men, who had had six or more partners in the previous five years, however, only 8 percent use a condom every time; 16 percent use one almost every time; 30 percent use one "sometimes"; 6 percent use one "seldom," and 40 percent never use a condom.

The frequency of condom use is no greater for women. Among women with two partners in the previous five years, 13 percent reported that they use a condom every time they have sex and 66 percent never use a condom; among women with three or more partners, 11 percent use a condom every time they have sex and 57 percent never use a condom.

These figures are difficult to interpret precisely. It is possible that respondents who use a condom some but not all of the time make accurate judgments of when they are at risk. This is not very likely, however, especially in light of the evidence that having more sexual partners does not increase the frequency of condom use. Concern about AIDS has led to changes in the sexual behaviour of Canadians, but these changes are far from making safer sex the norm.

Conclusion

In a certain sense, these data speak for themselves: while the use of injection drugs and sexual practices that carry the risk of HIV infection are confined to a minority of the Canadian population, large *numbers* of Canadians are potentially at risk. Sexual practices that involve risk are concentrated among adults who are not married (except widows and widowers) and among younger people. The prevalence of unsafe practices is unrelated to socio-economic variables, such as education, income, and occupation, or to location, including region and size of community. There appears to be a much greater prevalence of risk among men, but this is in part due to bias in measurement. Too few respondents reported using injection drugs to permit an examination of their characteristics.

Approximately half of Canadians who had had more than one sexual partner in the previous five years said that they had changed their sexual practices in response to the threat of HIV infection. Still, about 6 percent of all men reported having had six or more sexual partners in the previous five years and an equal number reported that they had had unprotected sex on at least one occasion with someone they did not know well. Two percent of men and just less than 1 percent of women reported that they had "had sex without using a condom with someone [they] thought might be a carrier of the AIDS virus." The figures on condom use demonstrate that many sexually active people do not practise safer sex.

AIDS education alone is not sufficient to bring about behaviourial change. If anything, better-informed Canadians are *more* likely to have engaged in sexual practices that place them at risk of HIV infection! There is a need to tailor the content of AIDS education to sectors of the population whose practices place them most at risk.

While restrictions on the length of the questionnaire limit the present analysis of sexual behaviour, there are serious drawbacks to the use of any single cross-sectional survey to understand sexual behaviour and behavioral change. Understanding changes in attitudes and behaviour requires, at the least, repeated cross-sectional surveys. Still better would be a longitudinal survey, in which respondents are interviewed on at least two different occasions. While the high cost of longitudinal surveys remains a major limitation, important advances in knowledge of how to organize the data collection and in the statistical analysis of longitudinal data make such an enterprise scientifically feasible.

4 Information about AIDS: Sources and Responsibility

Which media are used to inform Canadians about HIV infection and AIDS is potentially critical to the success of these efforts. Not only are different media likely to differ in overall effectiveness, but the effectiveness of a particular medium may not be the same for all segments of the population. In addition, the source of messages about AIDS may also have an impact on their effectiveness. This chapter begins with an analysis of what Canadians report is their main source of information about AIDS and where they say they would go to learn more about AIDS. There follows an examination of the percentages of Canadian adults who have seen a program about AIDS on television or listened to one on the radio, read an article in a newspaper or magazine, read a pamphlet, or called an AIDS "hotline." Exposure to these media is then examined in relation to the key predictors of knowledge about AIDS. This chapter also reports on Canadians' opinions concerning the responsibilities that medical practitioners and parents, the various levels of government, and other organizations should have for AIDS education.

We will also examine the relationship between exposure to information about AIDS in the different media and knowledge about AIDS. These findings must be treated with caution, however, because the *direction* of the relationship cannot be determined from a single survey. If, for example, people who report having watched a television program know more about AIDS, it is possible that they know more because of the program. But it is also possible that people with more interest and previous knowledge of AIDS are more motivated to watch a program on the subject. The present survey can be used to *describe* the association between information about AIDS and exposure to mass media; it cannot be used to demonstrate that use of some particular medium *causes* knowledge to increase.[1]

Sources of Information about AIDS

Table 4.1 summarizes the answers to the question "What has been your main source of information about AIDS?" Television and newspapers, which are named by 39 percent and 23 percent of respondents respectively, lead the list. Magazines, the main source for 9 percent, and brochures, the main source for 7 percent, are a distant third and fourth in popularity. The remaining 22 percent of responses included a great variety of sources of information. Between 2.5 and 6 percent of respondents named radio, books, and/or journals and schoolteachers. All health authorities *combined* – physicians, nurses, hospitals, and clinics – account for only 2.5 percent of all mentions; the gay community, AIDS groups, and AIDS hotlines account for 0.3 percent; and the provincial departments of health, Health and Welfare Canada, and "government" account for 0.2 percent. In the main, Canadians rely on the mass media rather than more specialized publications to learn about AIDS.

Asking people where they would look "to learn more about AIDS" produced a remarkably different distribution of responses (see again Table 4.1). Physicians, named by 32 percent of the respondents as the best source of information, were by far the most frequently mentioned, even though only 0.9 percent of respondents reported that physicians *had been* their main source of information. Next most popular were health clinics, chosen by 11 percent; journals and books, chosen by 8 percent; and pamphlets, chosen by 7 percent. Television and newspapers, respectively, accounted for only 6 and 5 percent of the respondents' choices.

While the enormous discrepancy between the distributions of the main source of information and the preferred source is disturbing at first, the two questions are not as similar as they appear. The question about the main source of information is probably understood by most respondents to refer to the kinds of general information about AIDS that are reported in the mass media, while the question about where to go to find out about AIDS assumes a different goal, that of obtaining specific informa-

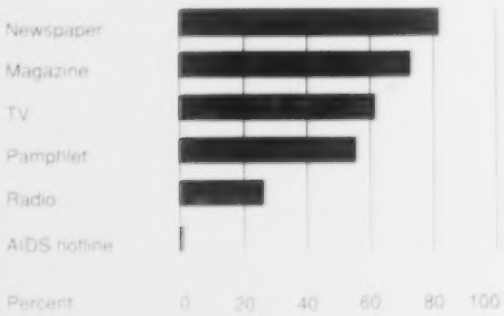
TABLE 4.1
Main source and best source of information about AIDS

Source of information	Main source (percentage)	Best source (percentage)
Television	39.1	5.7
Radio	3.5	1.1
Videos, movies	2	2
Newspapers	22.5	4.6
Magazines	8.8	2.8
Newspapers and magazines	2	1
"Reading"	4	5
"Media"	3.1	6
Pamphlets	6.6	7.1
Medical journals	4	1.2
Journals, books	3.3	7.9
Library	0	1.0
Family members, spouse	7	5
Friends	9	0
Nurse	6	5
Doctor	9	32.1
School teachers	2.6	1.8
Hospital, clinic in hospital	4	1.6
Health clinic	7	11.0
Through own occupation	1.1	0
Gay community	1	1
AIDS groups	2	2.4
A person with AIDS	0	8
Telephone hotline	0	3.2
Department of Health	1	3.7
Provincial government	0	2
Health and Welfare	1	1.3
Government	0	1.0
All others	1.6	2.2
Don't know	1.6	4.3
Refused to say	4	5
Total	100.0	100.0

TABLE 4.2
Exposure to information about AIDS from various media

	Exposure to information about AIDS (percentage)					
Medium	Has used medium	Has not used medium	Not certain	Does not use medium at all	Don't know	Total
Watched program on tv	62.5	34.3	2.6	4	2	100.0
Heard program on radio	27.0	65.8	2.4	4.6	2	100.0
Read newspaper story	81.7	16.0	1.4	8	1	100.0
Read article in magazine	72.8	25.1	1.0	1.0	1	100.0
Read pamphlet	56.0	42.6	1.0	3	1	100.0
Telephoned AIDS hotline	1.0	98.9	0	0	1	100.0

FIGURE 4.2
Percentage who have learned about AIDS from various media



tion about some aspect of AIDS. That information is better obtained from an expert or a published reference than from general coverage of AIDS in the mass media.

Respondents were also asked whether they had ever heard about AIDS from any of six particular sources. As Table 4.2 indicates, very large percentages had read a newspaper story about AIDS (82 percent), read an article in a magazine (73 percent), or watched a program on television (63 percent). Just over half had read a pamphlet, and a quarter had listened to a radio program about AIDS. One percent of the respondents had made use of a telephone hotline. These figures partly reflect more general differences in peoples' viewing, listening, and reading habits. A regular reader of any newspaper, for example, would have difficulty avoiding articles about AIDS. Given the relatively small amount of broadcast time devoted to documentaries on radio, except for the CBC, it is possible that people who say they have listened to or seen a program about AIDS are actually referring to a brief item on AIDS in a news report.

Who Uses Which Media?

For AIDS educators, and more generally for people engaged in health promotion, it is important to know whether some media are more effective than others in reaching particular sectors of the population. The question is whether the "market" for information about AIDS is segmented, like the markets for many consumer products. To address this question, use of the various media was correlated with five of the major predictors of levels of knowledge about AIDS and of behaviour entailing risk of HIV infection: gender, age, marital status, education, and region.[2]

Only education exhibits a consistent effect across all the media. As Table 4.3 indicates, attention to *all* the media increases with education. For television viewing, the range is 20 percent: about 70 percent of respondents who had graduated from high school or obtained more education reported that they had watched a program about AIDS, compared to about 50 percent of respondents who had not completed high school. For radio programs, the trend is similar but weaker. Education has the strongest impact on reading about AIDS. Individuals who had not attended high school are nearly 20 percent less likely to have read a newspaper story, magazine article, or pamphlet than are individuals with at least some high school. Generally speaking, people with less education rely more on the electronic media and less on print media.

There are a number of other less consistent although statistically significant effects:

- People in British Columbia and Quebec are more likely to report having watched a program about AIDS than people in other parts of Canada.
- People between the ages of 18 and 24 are about 15 percent less likely than people 25 years and older to report having seen a television program about AIDS.
- People in Quebec are less likely than people in English-speaking Canada to have read an article about AIDS.

FIGURE 4.3
Percentage who have learned about AIDS from various media, by respondent education

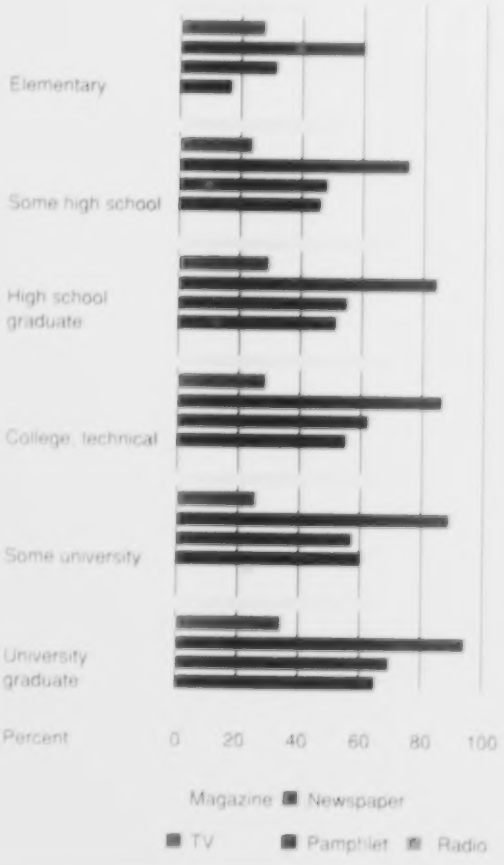


TABLE 4.3
Exposure to information about AIDS from various media, by education

	Percentage who have ever used medium					
Education	Program on tv	Program on radio	Read newspaper story	Read magazine article	Read brochure pamphlet	Number of cases
Elementary school only	46	27	60	42	31	97
Some high school	54	22	76	61	49	298
High school graduate	67	28	84	77	57	305
College, Technical	71	27	84	81	62	234
Some university	69	24	89	87	58	112
University graduate	66	34	94	83	69	186

- Men are less likely than women to have read an article about AIDS.
- 18- to 24-year-olds are about 15 percent more likely than 25- to 54-year-olds and 30 percent more likely than people over 54 to have read a pamphlet about AIDS.

These differences are large enough to warrant consideration in the development of AIDS education. They fall far short, however, of segmenting the population into distinct groups for which sharply different communications strategies are advisable.

Methodological difficulties again suggest caution in translating these findings into policy recommendations. What is missing from the analysis are measures of the current amount of coverage of AIDS in the different media. The best example is provided by the pamphlets, since they are directly aimed at providing information about AIDS, unlike the coverage in the mass media, where the communication of information is often subordinate to the presentation of news events. That eighteen- to twenty-four-year-olds are more likely to have read brochures may reflect the reading habits of young people and easy availability of AIDS pamphlets; but it could instead reflect the considerable efforts that have gone into providing educational material to them in schools, colleges and universities, and in other contexts.

Unfortunately, the most consistent pattern of media use is the tendency of people with more education to make more frequent use of the media. This finding emphasizes the importance, and difficulty, of reaching less-educated Canadians.

Sources of Information and Knowledge about AIDS

While these findings should be treated with some caution, it is reasonable to examine the relationship between use of the media and knowledge about AIDS. The use of media was measured by the question concerning the respondent's main source of information about AIDS and by the six items indicating whether he or she had watched or heard a program on the topic, and so on. Knowledge about AIDS was measured by the nine-point scale described in chapter 2. Because education has a strong effect on knowledge about AIDS and on use of all the media, it causes what is known as a "spurious correlation" between knowledge of AIDS and media use. To eliminate this effect, the following discussion is based on analysis in which this impact of education is removed statistically.

The results are surprising. Having read an article about AIDS in a magazine was associated with a score about 0.6 point higher on the nine-point scale of knowledge about AIDS than not having read one; reading a newspaper article or pamphlet was associated with an approximately 0.4-point increase in knowledge; and watching a TV program or having called a hotline with only a 0.2-point increase. Hearing a radio report had no effect on knowledge. In addition, respondents whose *main* source of information was family and/or friends scored one point more on the knowledge scale; and people whose main source of information was a school or workplace or magazines scored about one-half point more than people with other main sources of information. As Table 4.1 shows, only about 2 percent of the respondents relied on family and friends to find out about AIDS.

Irrespective of their education, people who read about AIDS know more about it; and reading about AIDS in a magazine is associated with a larger gain than reading about it in a newspaper. This suggests that educators need to try to get the kinds of people who usually do not read much to read about AIDS.

Responsibility for AIDS Education

In order to determine the legitimacy of the various sources of information about AIDS, the survey asked how much responsibility "for informing people about preventing the spread of AIDS" a number of groups and institutions should have. The question began:

> First, what about the public-health department in the city or region where you live? Do you think that the public-health department should have a *major* responsibility, that it should have *some* responsibility, or that it *should not be involved* in educating people about AIDS?

As Table 4.4 shows, 59 percent of the respondents indicated that the public- health department should have a major responsibility for AIDS education; 38 percent said it should have a minor responsibility; 1 percent said it should not be involved, and 2 percent had no opinion. These ratings are best interpreted in comparison with the ratings of other groups and institutions.

With one exception, there is majority support for all the institutions having a "major responsibility" for AIDS education. There is considerable variation in the ratings. Highest in public support are parents (82 percent of respondents said they should have major responsibility for AIDS education), doctors (76 percent), and clinics for sexually transmitted diseases (75 percent). Next are the government of Canada, the government of the province in which the respondent lives, and the Canadian Public Health Association, to which respectively 71, 66, and 65 percent of Canadians assign a major responsibility. Public-health departments and "organizations in your community concerned about AIDS" receive about 60 percent support; community health centres in Quebec receive 55 percent support, and family-planning and birth-control clinics receive 41 percent support. Only "churches, synagogues, and religious institutions" receive little public support. 14 percent assign them a major responsibility, 46 percent minor responsibility, and 35 percent no responsibility at all (5 percent had no opinion).

FIGURE 4.4
Who should have responsibility for AIDS education?

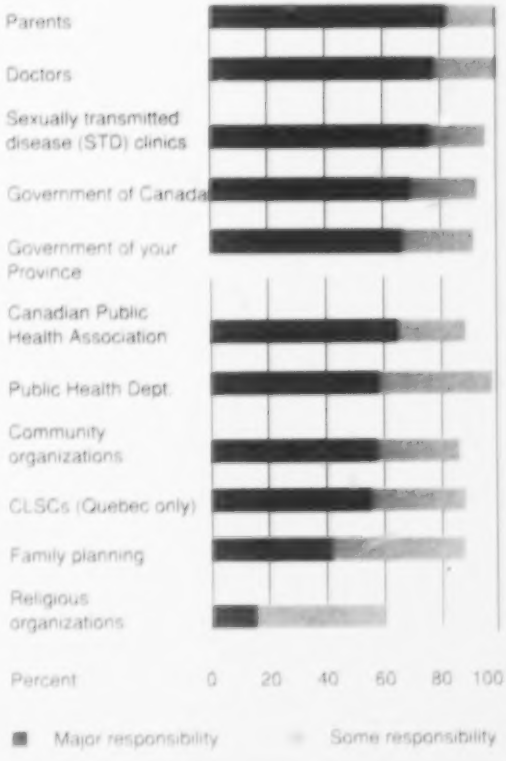


TABLE 4.4
Ratings of groups' and organizations' responsibility for AIDS education

	Rating of responsibility for AIDS education (percentage)					
Group/institution	Major responsibility	Some responsibility	Should not be involved	Not familiar	Don't know	Total
Parents	82.0	16.7	0.8	0.0	0.5	100.0
Doctors	75.5	22.5	0.8	0.0	1.2	100.0
Clinics for sexually transmitted diseases	74.7	21.6	1.5	0.0	2.2	100.0
Government of Canada	70.7	22.8	4.6	0.0	1.9	100.0
Government of your province	66.4	27.4	4.6	0.0	1.6	100.0
Canadian Public Health Association	64.5	24.9	0.7	7.8	2.1	100.0
Public Health Department	59.1	38.1	0.7	0.6	1.5	100.0
Organizations in your community concerned with AIDS	58.0	29.8	3.5	0.0	8.7	100.0
CLSCs (in Quebec only)	55.2	36.4	1.3	4.0	3.1	100.0
Family planning and birth control clinics	41.4	49.8	5.2	0.8	2.8	100.0
Churches, synagogues, and religious institutions	14.4	45.6	35.2	0.0	4.8	100.0

Canadians see AIDS education as the responsibility of parents, medical and health organizations, and government. There is a minor tendency to favour higher over lower levels of government, and there are minor differences among kinds of institutions preferred. Few people regard AIDS education as the responsibility of religious institutions.

Conclusions

The result of asking people about their main source of information about AIDS and whether they have seen programming about AIDS in a number of different media is a profile of media exposure that would likely be the same for other public issues. Most people rely on the mass media rather than on their immediate friends or specialized publications to find out about current events; and AIDS is one such event. The most important differential in media use is socio-economic. People with more education report more exposure to information about AIDS from *all* the media. Not surprisingly, education also has a strong effect on knowledge of AIDS, although its impact on behaviour involving risk of HIV infection is at best weak.

Although the survey is not ideal for measuring the impact of media use on knowledge of AIDS, the analysis is suggestive. Reading about AIDS, in newspapers, in pamphlets and brochures, and especially in magazines, is more strongly associated with higher levels of knowledge than watching or listening to programs about AIDS. Unfortunately, it is difficult to change peoples' reading habits. People who do not read newspapers and magazines regularly, because of their personal disposition or relatively low level of literacy, are not likely to be induced to read them to find out about AIDS. It is easier for AIDS educators to make direct efforts to reach people with pamphlets and similar material. Given the strong relationship between education and reports of having read a pamphlet about AIDS, it is important that some of this material be accessible to people with weaker reading skills.

The public sees AIDS education as a responsibility to be shared broadly among the medical profession, government, and specialized organizations. The jurisdictional issues are likely to be far more important to those involved than to the public. With the exception of a strong belief that AIDS education is not a matter for religious institutions, there is relatively little variation in the ratings of the appropriateness of various public and private

bodies' responsibility for promoting an understanding of AIDS. This can be taken as affirmation of the present broad involvement of all levels of government in collaboration with medical and public-health organizations and professionals.

5 Public Policies for Dealing with AIDS

At a time when public discussion of medical issues is still confined largely to health-care budgets and the quality of medical services, the AIDS epidemic has changed the public policy agenda. In part this is because of the long asymptomatic period during which HIV-infected people are able to transmit the infection[1] and because AIDS causes death at ages when fatal illness is extremely rare. The impact of these epidemiological aspects of HIV infection and AIDS is amplified by their high incidence among gay men and injection drug users. AIDS is a unique threat as well because it has appeared at a time when few Canadians have any memory of an epidemic that could not be controlled by drugs or vaccination.

The AIDS epidemic has raised important questions about the rights and treatment of HIV-infected people, people with AIDS and sympotomic HIV infection, and, more generally, about civil rights in Canada. In the context of AIDS, guarantees against discrimination in employment and housing and other aspects of civil rights, which have long been regarded as settled and supported by a broad public consensus, have become open to question.[2] These issues have arisen despite the fact that epidemics, and the questions about public policy that they raise, are not at all new. Public-health measures designed to deal with communicable diseases have been in place for many years.[3] Indeed, compared to diseases that can be spread through casual contact, AIDS is not easily communicated.

Thus far public debate on these issues has mainly involved community organizations that represent people with and at high risk from AIDS, health professionals in the governmental and voluntary service organizations that provide health and social services, and political and bureaucratic policy-makers. In the absence of a survey dealing with public opinion as a whole, media attention has often focused on incidents in which parents, employers, and other citizens have voiced their concerns directly. While the distillation of poll results into the least controversial policies is no substitute for effective and compassionate policy-making, a knowledge of public opinion can do much to inform debates over public policy.

This chapter first describes Canadians' views on public policies dealing with AIDS. By examining the impact of differing formulations of the questions, it will be possible to gain insight into respondents' reasoning in answering them. Most of the questions dealing with public policy concern the treatment of persons who are not ill but have tested positive for HIV. This apparently paradoxical combination of good health with the presence of a deadly and transmissible virus is a unique characteristic and the greatest source of public fear of AIDS.

This section of the questionnaire began with questions that asked people whether they would send their children to class if the teacher were known to be HIV positive and whether they would allow their children to play with an infected child. These were followed by questions dealing with the legal protection of employees with HIV infection and their right to rental accommodation. Further

questions concerned testing for HIV infection; they dealt with anonymous testing, employers' rights to test job applicants, whether physicians should be empowered to order tests of people who they suspect are carriers, and the right of insurance companies to demand tests of people seeking insurance. The last questions dealt with educational programs in the schools, when those programs should begin, and whether clean needles should be provided to injection drug users to stop the spread of the virus.

This chapter also examines differences in the opinions of major sectors of the population on these issues. Such differences might increase the likelihood of conflict over the direction of AIDS policy. Like the analysis of knowledge about AIDS in chapter 2, this discussion will cover key demographic variables (age, gender, and marital status), location (region and size of community), socioeconomic differences (education, household income, and occupation and labour-force status), "cultural" variables (ethnicity and religion and religiosity), and social contacts (with a person with AIDS and homosexuals). Also considered here is the question of whether there is a single dimension of response to AIDS, with, on the one side, people who would send their child to the class of an AIDS-infected teacher, support anonymous testing, prohibit employment and housing discrimination, and so on, and, on the other, people with the opposite opinions. Last, the chapter examines the relationship between individuals' knowledge about AIDS and their views on public policy issues.

Response to a School Teacher Who Is HIV Infected

Based on an incident that occurred in Nova Scotia, the first question asked respondents whether they would send their child to school if her or his teacher were known "to have been exposed to the AIDS virus." The question reads:

> Now I would like to ask you some questions about policies for dealing with people who have been exposed to the AIDS virus. The first question concerns *a male teacher who is a homosexual and has been exposed to the AIDS virus*.
>
> *Medical authorities say that there is no risk at all to the children in this class from this teacher, but some parents say they don't trust the authorities because not enough is known at present about AIDS.*
>
> The teacher is in good health and shows *no* symptoms of having the disease itself.
>
> Let's say that you had a *six-year-old son* who was in a class taught by this teacher. Would you permit your *six-year-old son* to continue to go to classes taught by this teacher?

Instead of providing a single question to be put to all respondents, the computer introduced a number of variations into the formulation of the question, at random: the sex and sexual orientation of the teacher were varied, some of the time medical authorities were said to have given assurances of safety, sometimes to what were said to be sceptical parents, and the child involved was described as female or male and aged six, ten, or fourteen.[4] The italicized phrases indicate the location of these variations in the question. The combinations of these possibilities resulted in 108 possible versions of the question, although each respondent heard only one of the 108. There is no relationship between the particular version addressed to a given respondent and her or his own characteristics – for example, whether she or he is a parent.

When responses to all formulations of the question are combined,[5] 69 percent of Canadians said that they would send their children to school if the

TABLE 5.1
Responses to a question about sending a child to school if the teacher is HIV infected

This question is about a teacher who has been exposed to the AIDS virus. The teacher is in good health and shows NO symptoms of having the disease. If you had a child in this teacher's class, would you permit your child to go to the class?

Would permit	69	Would you send your child to school with COMPLETE CONFIDENCE or would you have SOME MISGIVINGS in doing so?	
		Complete confidence	48
		Some misgivings	51
		Not sure, don't know	1
		Refused	0
		Total	100
Would permit with some qualification	8	*Verbatim responses classified*	
		Qualifications attaching conditions to the teacher's continuing	25
		References to the morals of the teacher (e.g., "okay so long as he has no record of sexual harassment")	8
		Providing the teacher is not a homosexual	11
		Other negative reactions (e.g., "as long as there was no risk.")	39
		Responses suggesting uncertainty (e.g., "I'd consult my doctor for need more information")	14
		Other, unclassifiable responses	3
		Total	100
Would not permit	16	Do you think you might be convinced to send your child to this class if you were shown the medical evidence in more detail, or do you think that there would always be some risk to your child?	
		Might be convinced	23
		Always some risk	72
		Don't know	5
		Refused to say	0
		Total	100
Not sure, don't know	7	If you had to make a choice, what do you think you would do, send your child to class or not?	
		Would send child	32
		Would not send child	27
		Don't know	40
		Refused to say	1
		Total	100
Refused to say	0		
Total	100		

child's teacher had "been exposed to the AIDS virus." Another 8 percent responded positively but qualified their answer in some way. Sixteen percent would not send their children to school in the circumstances described, and 7 percent initially would not give an opinion. In this context, Canadians are generally respectful of the rights of HIV-infected persons.

Further information about respondents' attitudes was gathered by following up the initial question. Respondents who said that they would send their children to school were divided almost equally over whether they would do so with "complete confidence" or with "some misgivings." Of the initially negative respondents, one-quarter said that they might be convinced to send their child to class. While in a decided minority, respondents who opposed sending their children to school appear to hold their views more strongly than respondents who would send their children.

Respondents who qualified their positive answers to this question expressed a great variety of views. Some were generally uneasy, saying, for example, that they would send their child to class only if the teacher were well enough to teach, even though all versions of the question included the statement "The teacher is in good health and shows no symptoms of having the disease." Others voiced stronger qualifications, saying that they would send their child to school "only if the teacher is not gay," or "only as long as the teacher has no record of sexually molesting children." Still others said that they needed more information. When respondents who did not respond initially were pressed with the question "If you had to make a choice, what do you think you would do: send your child to class or not?" just less than half still would not give an opinion; a small majority of the remainder gave a positive response.

Three elements of the question as it was posed in the survey were varied randomly. The first variation involved the teacher, who was identified in one of six different ways, as:

- a man who is a teacher and has been exposed to the AIDS virus;
- a woman who is a teacher and has been exposed to the AIDS virus;
- a male teacher who is a homosexual and has been exposed to the AIDS virus;
- a female teacher who is a lesbian and has been exposed to the AIDS virus;
- a teacher who has been exposed to the AIDS virus because he received contaminated blood during an operation; or
- a teacher who has been exposed to the AIDS virus because she received contaminated blood during an operation.

By examining the differences in answers to the question when the teacher was described in these different ways, it is possible to determine the impact of saying the teacher is gay. The inclusion of the description of a lesbian teacher provides evidence of whether it is the teacher's sexual orientation or the association of AIDS with gay men that affects respondents.

The second variation in the question that was varied involved the credibility of information about the risk of infection. One-third of the time the question included an "assurance" from medical authorities that there was no risk to children from the teacher; one-third of the time this assurance was accompanied by a statement that the parents distrust these authorities; and one-third of the time there was no statement at all.

The third variation in the question involves the sex and age of the child: half the time the child was described as a girl and half the time as a boy, and one-third of the time she or he was said to be six, ten, or fourteen years of age. An indication of whether responses are motivated by a fear that the child will be sexually assaulted is provided by examining the responses to versions of the question that say that the teacher is gay and the child is a boy (and alternatively, the teacher is not gay and the child is a girl).

Table 5.2 shows the impact of these variations in the formulation of the question. Only the sexual orientation of the teacher had a statistically significant effect on the responses. The statements about the health risk and the sex and age of the schoolchild

TABLE 5.2
Would respondent allow a child to attend school if his or her teacher is known to be HIV infected, by gender and sexual orientation of the teacher, assurances about risk and gender and age of the child

	Allow child to attend school? (percentage)					
Characteristic of teacher	Yes	Yes, qualified	No	Not sure	Total	Number of cases
GENDER SEXUAL ORIENTATION						
Male - unstated	68	8	19	5	100	210
Female - stated	69	7	16	8	100	201
Gay	64	7	19	9	100	230
Lesbian	67	6	20	7	100	223
Male heterosexual	76	8	8	8	100	192
Female heterosexual	75	7	12	6	100	196
ASSURANCE ABOUT RISK						
None	69	8	16	7	100	409
From health authority	73	8	13	6	100	432
Some opposition	67	7	18	8	100	412
GENDER AGE OF CHILD						
6-year-old boy	72	8	15	5	100	217
10-year-old boy	69	5	17	9	100	206
14-year-old boy	69	9	14	8	100	204
6-year-old girl	68	8	15	9	100	207
10-year-old girl	67	8	18	7	100	212
14-year-old girl	73	6	15	6	100	206
Total	69	8	16	7	100	1253

did not significantly affect whether the respondent said he or she would send the child to school.[6] Even with the teacher described as homosexual, 64 percent of the respondents said they would send their children to school, compared to only 19 percent who would not. Describing the teacher as a heterosexual male (at least implicitly, by saying that the infection resulted from receiving contaminated blood) raised to 76 percent the percentage who would send a child and lowered opposition to 8 percent. That the version of the question that left the teacher's sexual orientation unstated produced a response much closer to that for the homosexual teacher suggests that HIV-infected people are assumed to be gay.

Perhaps the most interesting finding is that the *sex* of the teacher had no effect on the responses, even for the comparison between a gay man and a lesbian. Since lesbian women are at low risk from AIDS, the difference between the response to a lesbian teacher and a female teacher "exposed to the AIDS virus because she received contaminated blood in an operation" must be entirely a reflection of prejudice based on sexual orientation.

Lending support to the argument that some respondents are motivated by prejudice rather than a concern about the prevalence of AIDS among gay men is the finding that respondents who were asked a version of the question that combined a gay teacher *and* a male student were *not* disproportionately likely to say that the child should not be sent to school.[7] Since the sex and age of the child described in the question had no impact on the response, it appears that *general* feelings about homosexuality and the contagiousness of AIDS, rather than particular images of interaction between the teacher and child, motivated individuals' responses.

Finally, it is significant that assurances about the safety of the child and expression of parents' supposed doubts had no influence on response. These variations in the question invited respondents to avoid dealing with a difficult question by going along with, or voicing their suspicion of, authority. The absence of an effect suggests that public opinion on this issue is firmly fixed and that in such situations as the one described, public statements alone are not likely to have much effect on either side of the issue.

To summarize, concern about the health risk to students leads about 10 percent of the population to say that they would not send their children to a class taught by an HIV-infected teacher; homophobic attitudes, which involve no differentiation between gays and lesbians, double the proportion who would not send their children to school, to about 20 percent. Still, the context for these findings is a situation where, when the teacher is described as a gay man, about two-thirds of Canadians would send their children to class and only one-fifth would not do so. About one in twelve respondents gives no opinion initially, and the remainder express some sort of qualified approval.

TABLE 5.3
Responses to a question about sending a child to school if a fellow student is infected with AIDS

Now let's say that an elementary school student is found to have been exposed the AIDS virus through a blood transfusion. Medial authorities say that there is no risk at all to the other children in this class from the infected student. If your child was in this student's class would you allow your child to attend that class?

Would allow	74	
Would allow with some qualification	8	*Qualified responses classified into categories*
		Would warn child about the infected child 21
		Would allow with some hesitation 46
		If there was no risk 24
		Other qualified responses 9
		Total 100
Would not allow	13	
Don't know	5	
Refused to say	0	
Total	100	

A Schoolchild Who Is HIV Positive

The question about the HIV-positive teacher was followed by a similar item about "an elementary-school student who is found to have been exposed to the AIDS virus through a blood transfusion." Respondents were reassured that "medical authorities say that there is no risk at all to the other children in this class from the infected student." This question removes both the sexual orientation of the teacher and the issue of sexual assault, leaving only concern about the risk of infection through casual contact.

The content of this question about the HIV-infected child is most similar to the version of the previous question that described a female teacher given contaminated blood in an operation. The distribution of responses, shown in Table 5.3, supports this conjecture. Seventy-four percent of the respondents said that they would allow their children to attend class with the HIV-positive student, 8 percent would do so with some qualification, 13 percent would not allow their child to attend class, and 5 percent had no opinion. These values are all within 1 percent of those obtained for the heterosexual female teacher.

Some of the qualified responses (which were recorded verbatim) betray uncertainty about the risks of HIV infection through casual contact. About one-quarter of the time, respondents' qualifications involved an explicit demand for reassurance that their child would not be at risk, despite the statement to this effect in the question. It is likely that some of the respondents who had no opinion were also moved by such fears. Taking these figures together, we conclude that between 15 and 20 percent of the respondents were fearful that AIDS can be spread through casual contact.

Questions about Employment and Housing

Respondents were asked whether employers should have the right to require that job applicants be tested for HIV infection. Purposely left unstated were the consequences of the employer's discovering that the test was positive, but the question implies that applicants could be refused consideration if they did not agree to a test and they could be refused employment if the test was positive. The question was varied randomly so that in some cases there was no reference to a specific occupation, while in others the occupation was given. When no occupation was mentioned, as the first row of Table 5.4 indicates, 25 percent of respondents agreed that the employer should be able to require a test; 61 percent were opposed; 10 percent said it depends; and 4 percent had no opinion. Most respondents who gave qualified answers said that the nature of the job was at issue.

Specifying the occupation of the job applicant radically altered the responses. Support for testing ranged from 16 percent for accountants to about 25 percent for office clerks, salespersons, and construction workers, to between 40 and 50 percent for daycare workers, high-school teachers, restaurant workers, and factory workers who process food, to about 75 percent for nurses and orderlies in hospitals. Compared to answers to the questions about the HIV-infected teacher and student, the answers to this question about job applicants appear relatively conservative. In addition to misinformation about the transmission of HIV infection and homophobia, the relatively strong support for testing job applicants likely reflects three factors: caution in the absence of information about the health risks in specific situations; a tendency to place the right of existing employees before those of applicants seeking new employment; and a casual view of the consequences of HIV testing.

The next question (see Table 5.5) deals with the rights of an employee who is found to be HIV infected (described as "a carrier of the AIDS virus" in the questionnaire). Respondents were asked whether the employer "should have the legal right to fire the

TABLE 5.4
Responses to the question about testing job applicants

Suppose that someone is applying for a job as a [job description]. Do you think that the employer should be able to require that the job applicant undergo a test for the AIDS virus before being hired?

	Percentage distribution of responses					
Job Description	Require test	Do not require test	Depends	Don't know	Total	Number of cases
No occupation stated	25	61	10	4	100	352
Accountant	16	78	1	5	100	96
Office clerk	25	71	1	3	100	91
Salesperson	25	63	2	10	100	88
Construction worker	26	72	1	1	100	82
Daycare worker	45	46	4	5	100	98
High school teacher	42	52	0	6	100	100
Food processing	50	42	4	4	100	93
Restaurant waiter	44	53	0	3	100	73
Nurse in hospital	73	19	5	3	100	79
Hospital orderly	74	23	1	2	100	100

TABLE 5.5
Support for employee who carries the AIDS virus, by whether or not co-workers complain and gender of the employee

Say that the owner of a business learns that one of his workers is infected with the AIDS virus. This [man's/woman's] work is completely satisfactory. Also, none of [his/her] work would expose other employees to infection. [blank] But people working with this person complain that they don't want to be around someone who carries the AIDS virus]. Do you think the owner should have the legal right to fire the employee?

	Percentage distribution of responses					
Action of co-workers; Gender of employee	Yes	Qualified responses	No	Don't know	Total	Number of cases
No complaint from co-workers						
male employee	9	3	84	4	100	290
female employee	7	2	88	3	100	330
Complaint from co-workers						
male employee	15	4	75	6	100	322
female employee	13	5	79	3	100	311

FIGURE 5.4
Support for HIV testing of job applicant, by job applied for

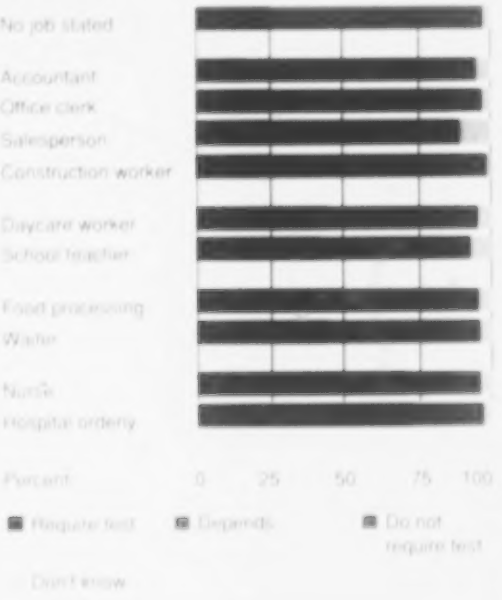
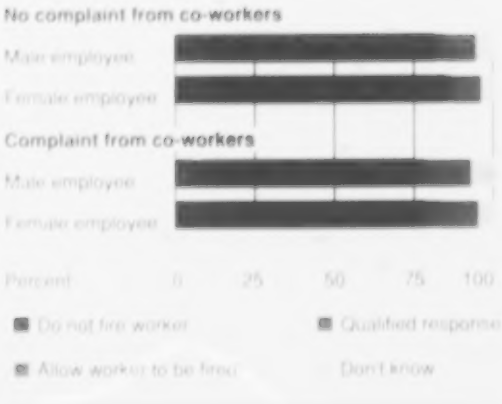


FIGURE 5.5
Support for not firing an HIV infected worker



employee." Again, the gender of the employee was varied randomly. In addition, half the respondents were told that "people working with this person complain that they don't want to be around someone who carries the AIDS virus"; the other half of the time, nothing was said about fellow employees. All versions of the question included a statement that the work of the employee was completely satisfactory. Respondents were overwhelmingly opposed to the employer's having the legal right to dismiss the worker. According to the situation, between 75 and 88 percent supported the worker's right to legal protection, compared to between 9 and 15 percent opposed. Another 5 to 10 percent gave qualified responses or took no position. The sex of the employee had a very small impact on responses; in the predicted direction, respondents were about 4 percent more likely to support a worker described as female. A complaint by co-workers had a stronger impact: it decreased support for the HIV-infected worker by 9 percent.

A similar question concerned discrimination in housing. It refers, randomly, to the wife or husband in a married couple, a man, a woman, two men, or two women who answer an advertisement to rent an apartment. The landlord, it is said, accidentally discovers that the prospective tenant is a carrier of the AIDS virus, and respondents were asked: "Do you think that the landlord should have a legal right to refuse to rent the apartment?" Opposition to this form of discrimination in housing was overwhelming. Depending on the circumstances, about 80 percent of Canadians would not permit the landlord to deny accommodation. Describing the infected person as one of two men seeking to rent the apartment decreased opposition to 74 percent.

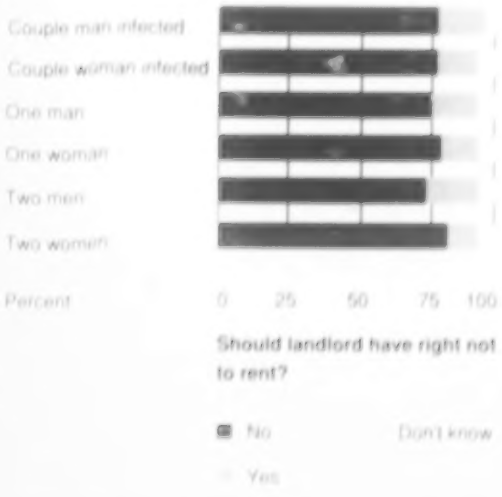
These results demonstrate overwhelming public support for the right of HIV-infected persons to protection from discrimination in employment and housing. Opposition is not entirely absent, but it is restricted to a small minority of the population. Support for the extension of these rights to the enforcement of equity in hiring does not, however, gain majority approval: about half the respondents would allow employers of teachers, daycare workers, and people who process and handle food the

TABLE 5.6
Support for prohibiting discrimination against HIV-infected tenants, by marital status and gender of tenant

[A married couple/A man/A woman/Two men/Two women] answer[s] an ad to rent an apartment. Now, what if the landlord discovers that [the man/the women/one of the men/one of the women] is a carrier of the AIDS virus? Do you think that the landlord should have the legal right to refuse to rent the apartment to the [couple/man/woman/men/women]?

	Percentage distribution of responses				
Description of prospective tenant	Yes	No	Don't know	Total	Number of cases
Couple (man infected)	17	79	4	100	204
Couple (woman infected)	14	79	7	100	195
Man	18	75	7	100	232
Women	14	80	6	100	210
Two men	21	74	5	100	202
Two women	12	82	6	100	210

FIGURE 5.6
Support for prohibiting discrimination against HIV-infected tenants, by marital status and gender of tenant



right to require tests of job applicants; and three-quarters would do so in the case of hospital workers. In this respect, public attitudes resemble current law, which does much more to protect workers in jobs than it does to constrain employers to treat job applicants equitably.

Testing for HIV Infection

Testing for HIV infection is one of the most controversial issues in the development of public policies to deal with AIDS. Ideally, such policies would simultaneously protect individuals' rights to determine how much and what information they have about their health status, assure that individuals exercise reasonable prudence in preventing the spread of infection, and provide health planners and health educators with the information needed to plan the delivery of care and discourage the spread of infection. Unknowing carriers of the AIDS virus who engage in unprotected sex or share needles threaten others and impose demands on the health-care system.

Reaching a compromise that protects individuals and effectively contains the spread of the virus is complicated by the imperfection of the bureaucratic systems. There have been sufficient numbers of well-publicized accidental disclosures of positive HIV tests to generate legitimate concern among people considering a test. Assuming that mandatory AIDS testing is regarded as an infringement of individual rights, weaker forms of coercion may do more harm than good, leading people away from a considered judgment of the merits of testing for fear that a positive test result might become known to their employers, landlords, and personal associates.[8]

The survey question that addresses this issue reads as follows:

> Let's say that someone suspects that he or she has been infected with the AIDS virus and is considering whether to be tested. Do you think a person should be able to have a test for the AIDS virus, *without* giving his or her name?

Because most Canadians are not likely to be aware of the distinctions of usage in the medical, health-promotion, and research communities, the description of a test "without giving his or her name" was used instead of the technical expression "anonymous testing." By more than a two-to-one majority, respondents supported anonymous testing: 68 per-

TABLE 5.7
Support for anonymous testing for AIDS, by arguments made to support or oppose it

Let's say that someone suspects that he or she has been infected with the AIDS virus and is considering whether to be tested [INSERTED ARGUMENT]. Do you think a person should be able to have a test for the AIDS virus without giving his or her name?

	Percentage distribution of responses				
Inserted argument	Allow	Do not know	Not sure, refused	Total	Number of cases
NONE	68	31	1	100	205
SOME people say that a person being tested for AIDS should have to identify himself or herself so that					
statistics on AIDS can be kept up to date	64	31	5	100	228
if the test is positive, the person can receive proper counseling on preventing the spread of the virus	54	41	5	100	208
if the test is positive, efforts can be made to contact people who may have been infected by contact with the person so that they can also be tested	54	41	5	100	207
SOME people say that requiring people to identify themselves would make them afraid to be tested for the AIDS virus					
which could increase the number of people who are transmitting the virus, since they do not know they are infected	76	16	8	100	190
because of what might happen if people learned they were infected. This could increase the number of people who are transmitting the virus, because they do not know they are infected	65	29	6	100	221

cent would allow people to obtain a test without giving their names; 31 percent opposed it; a remarkably small proportion, just 1 percent, did not state an opinion. These results are summarized in Table 5.7.

In order to judge the strength of support for anonymous testing, five different qualifying arguments were inserted into the question, at random. The results of this were as follows:

- The bureaucratic argument that the person being tested "should have to identify himself or herself so that statistics on AIDS can be kept up to date" had little impact on the responses.
- Appealing against anonymous tests on the grounds that they increase the risks of sexual partners of HIV-infected individuals measurably altered the responses. Support for anonymous testing fell to 54 percent and opposition rose to 41 percent (5 percent were undecided) when the question included either the argument that, if identified, those testing positive could "receive proper counselling on preventing the spread of the virus" or the argument that it would allow efforts "to contact people who may have been infected by contact with the person tested so that they can also be tested for AIDS."
- The arguments that "requiring people to identify themselves would make them afraid to be tested for the AIDS virus" and "this could increase the number of people who are transmitting the virus, since they do not know they are infected" *reduced* opposition to anonymous testing to only 16 percent of the population.
- Saying that people would avoid testing "because of what might happen if people learned they were infected," however, had no impact on responses.

While changing the formulation of this question affects the responses, even the strongest arguments against anonymous testing leave a clear majority in favour. Furthermore, advancing the strongest arguments for or against anonymous testing results in approximately equal shifts for and against it. This suggests that the simplest formulation of the question, in which no argument is advanced, provides a reasonable estimate of the state of public opinion – and this strongly favours anonymous testing.

The answer to the next question shows, however, that support for individuals' rights in relation to testing for HIV infection is highly conditional. It asked: "If a doctor thinks a patient has been exposed to the AIDS virus, should that patient be *required by law* to have a test for the virus?" Eighty percent of the respondents answered yes. There was strong support, too, for taking strong measures to follow up sexual contacts with people found to be HIV positive. Eighty-six percent responded affirmatively to the question:

> A doctor carries out a blood test and finds a person has been infected with the AIDS virus. Do you think that the infected person should be required *by law* to name his or her sexual partners so that they can be traced and warned that they might have been exposed to the AIDS virus?

Canadians' views about testing for AIDS are thus somewhat contradictory. There is widespread support for anonymous testing, which becomes even stronger if the argument is made that providing guarantees of security will lead more people to be tested. Once the authority of a physician is invoked, however, opinion swings strongly to support for testing without regard to the wishes of the individual and, if the test is positive, to mandatory disclosure and follow-up of sexual contacts.

When a commercial interest is involved, there is also support for testing. Fifty-one percent of respondents agreed that "a life-insurance company should be able to require that people taking out life insurance have a test to show they don't carry the AIDS virus," while 41 percent disagreed and 8 percent gave no opinion.

TABLE 5.8
Responses to questions about physicians having the power to require a test for HIV infection, the requirement that people who test positively for HIV give the names of their sexual partners, and the right of insurance companies to require tests for HIV infection

	Percentage distribution of responses			
Question	Yes	No	Don't know	Total
If a doctor thinks a patient has been exposed to the AIDS virus, should that patient be required *by law* to have a test for the virus?	80	17	3	100
A doctor carries out a blood test and finds a person has been infected with the AIDS virus. Do you think that the infected person should be required *by law* to name his or her sexual partners so that they can be traced and warned that they might have been exposed to the AIDS virus?	86	10	4	100
Do you think that a life insurance company should be able to require that people taking out life insurance have a test to show they don't carry the AIDS virus?	51	41	8	100

AIDS Education in Schools and Providing Needles to Injection Drug Users

Relative to the questions just discussed is an amazing consensus on the need for AIDS education in schools. The question read:

> Are you in favour of educational programs in the schools to inform students about the way in which AIDS is spread and how to avoid becoming infected?

As Table 5.9 shows, 97 percent of Canadians favoured educational programs in schools, 2 percent were opposed, and 1 percent had no opinion. To judge the seriousness of public commitment to AIDS education, those who favoured were asked at what age it should begin. Here too the responses reflect strong concern about the issue: 42 percent said AIDS education should begin at or before the age of ten, 34 percent said it should begin at eleven or twelve, and 17 percent at thirteen or fourteen; only 4 percent of the respondents wanted educational programs to begin at age fifteen or later.

There is strong majority support as well for allowing high-school students to obtain condoms in their schools. As Table 5.10 indicates, about 60 percent favoured this measure. Saying that the purpose of providing condoms was "to stop the spread of AIDS" had no impact on the answers, though this may have been assumed given the topic of the survey and the finding that the great majority of people are aware of the effectiveness of condoms in preventing HIV transmission.

The extraordinarily strong public support for AIDS education in the schools demonstrates the magnitude of public concern. Public acceptance of the need to prevent the spread of AIDS far overrides concerns about the moral implications of explicit discussion of sex and homosexuality. These findings appear to reflect a general shift in public opinion, as manifested, for example, in the widespread acceptance of sexually explicit advertisements about AIDS.

TABLE 5.9
Support for AIDS education in schools, and age at which AIDS education should begin

Are you in favour of educational programs in the schools to inform students about the way in which AIDS is spread and how to avoid becoming infected?

Favour programs	97
Oppose programs	2
Don't know	–
Total	100

At what age do you think these programs should begin?

Before age 8	9
8 or 9	12
10	21
11	8
12	26
13	10
14	7
15 or older	4
Don't know	3
Total	100

TABLE 5.10
Support for providing condoms to students in their high schools, by the presence of an argument about AIDS

Do you think that high school students should be able to obtain condoms in their schools [in order to stop the spread of AIDS]?

	Percentage distribution of responses				
	Yes	No	Don't know	Total	Number of cases
No mention of AIDS	60	34	6	100	695
In order to stop the spread of AIDS	58	34	8	100	658

TABLE 5.11
Support for providing free needles to drug users, by whether a counter-argument about increasing drug use is presented

People who inject themselves with drugs risk being infected with the AIDS virus if they share needles with other drug users. It might be possible to decrease the risk of infection by providing free needles to drug users [but doing this could also increase drug usage]. Do you think that free needles should be provided to drug users?

	Percentage distribution of responses				
Question	Yes	No	Don't know	Total	Number of cases
Without warning about increased drug use	37	58*	5	100	626
With warning about increased drug use	26	69	5	100	627

Providing Clean Needles to Injection Drug Users

With the increase in HIV transmission through the sharing of needles among injection drug users, programs to provide free needles have been initiated in a number of countries.[7] As with providing condoms in high schools, for many Canadians supporting a program to provide needles requires that they acknowledge an activity of which they do not approve. And, unlike sex among teenage high-school students, which may be seen as morally objectionable, injection drug use is illegal. The question read as follows:

> People who inject themselves with drugs risk being infected with the AIDS virus if they share needles with other drug users. It might be possible to *decrease* the risk of infection by providing free needles to drug users. Do you think that free needles should be provided to drug users?

Fifty-eight percent of respondents *opposed* providing free needles to drug users in order to decrease the risk of transmission by contaminated needles; 37 percent supported the policy, and 5 percent had no opinion. Adding a warning to the question that providing free needles "could also *increase* drug usage" significantly raised opposition to providing needles, to 69 percent of respondents. It is possible that a formulation of the question in terms of needle *exchange* would garner greater public support, in that no new user could obtain a needle.

Summary of Public Attitudes

Public opinion on some of the key policy questions concerning AIDS responds to two potentially contradictory impulses. On the one side, there is strong support for the rights of HIV-infected persons to protection from discrimination in employment and housing, combined with a readiness to allow teachers (and presumably other workers in "sensitive" occupations) to continue to work. Consistent with these views is majority support for anonymous testing for HIV. On the other side, these attitudes are qualified *and* potentially compromised once medical authority or necessity is invoked. There is strong support for giving physicians the unilateral right to test individuals who they believe may be infected and for mandatory follow-up of sexual contacts of HIV-positive individuals. Prospective employers of medical personnel and insurers are seen as legitimately demanding AIDS tests. In terms of AIDS prevention, there is a distinction between the nearly unanimous approval of educational activities, however explicitly they deal with sexuality, and a program such as providing needles to drug users, which acknowledges and does not aim to prevent illegal activity.

In assessing these attitudes, it should not be assumed that individuals' attitudes are centred entirely on AIDS. More general aspects of Canadians' attitudes and values, as well as their understanding of AIDS, affect the answers to these questions about public policies for dealing with AIDS. It is not surprising, for example, that people who are already employed should be seen as enjoying more rights than people applying for jobs. After all, federal and provincial laws offer much greater protection to employees than to job applicants.

The critical question is whether the policy preferences outlined here are actually contradictory – that is, whether they indicate a combination of rhetorical support with practical opposition to civil liberties. Experts may find it difficult to reconcile support for anonymous testing with granting physicians the right to demand tests. But there is likely little public

understanding of the implications of, for example, giving physicians the right to demand HIV tests or requiring HIV-positive individuals to disclose the names of their sexual partners. This ambiguity in public opinion is likely to remain until these issues become the focus of public debate.

Relationships between Attitudes towards Different Policies Dealing with AIDS

To this point public attitudes on a variety of issues relating to AIDS have been dealt with separately. It is not likely, however, that an individual who opposed the right of landlords to discriminate against HIV-infected persons would be no more likely than anyone else to say that HIV-infected persons should have security of employment. While these two attitudes are not likely to be perfectly correlated, opponents of discrimination in housing should be *more* likely than average to oppose discrimination in the workplace. Similarly, although there is much greater support for anonymous testing than opposition to giving doctors the right to demand tests, people who support anonymous testing should be *more* likely to oppose doctors' having the right to demand tests.

For some of the questions, however, the relationships are likely to be more complex. Support for providing needles to injection drug users, for example, is not quite so easily related to the concept of protection from discrimination that likely underlies answers to the questions about housing and employment. The key question, which is whether individuals' attitudes towards AIDS can be understood in terms of a single liberal-conservative continuum,[10] can be resolved by examining the interrelations among the various attitudes. Such an examination reveals that the answers to the questions about sending a child to school if the teacher is infected, testing of job applicants, physicians' rights to demand tests, discrimination in rental housing, and protecting the jobs of HIV-infected people are strongly related to one another.[11] Answers to the questions about anonymous testing, providing clean needles to drug users, and requiring HIV-infected people to name their sexual partners, however, are not strongly related to the other answers, or to each other.

Anonymous testing, providing needles, and compulsory follow-up of sexual contacts invoke conflicting interests: between the right to privacy and

the desire to provide counselling to HIV-infected people, to prevent the spread of the virus, and to warn the sexual contacts of an HIV-infected person, and between the desire to prevent the spread of HIV infection and discourage the use of injection drugs. It is not surprising that choosing between the potentially conflicting interests of a person and his or her sexual contacts calls into play a different set of principles from those evoked by deciding what sorts of protection should be given to a potentially vulnerable group, whose living in an apartment or continuing to work at a job poses no risk to anyone. The apparent inconsistencies in Canadians' attitudes towards AIDS arise from the complexity of the public policy issues raised by the AIDS epidemic.

Predicting Attitudes towards AIDS

The second major purpose of this chapter is to describe the extent to which various sectors of the population take different positions on the major policy issues. Tables 5.12 to 5.15 show the sectoral differences in responses to the questions about the HIV-infected teacher, rental accommodation, anonymous testing, physicians, power to demand tests, and providing clean needles to injection drug users. These measures were chosen for analysis because they reflect different aspects of attitudes towards AIDS. As potential predictors of these attitudes, the same measures used to examine levels of knowledge about AIDS are employed. The figures accompanying the tables show some of the larger sectoral differences in public opinion on these issues. The following discussion is also based on the results of a multiple regression analysis of policy attitudes. The regression is based on a scale of support for more tolerant policies to deal with AIDS, and combines the responses to the questions about the HIV-infected teacher and schoolchild, rental accommodation, and the HIV-infected worker's right to continued employment.[12]

Taking the results of this analysis as a whole, it is significant that the variation among sectors does not alter the overall consensus on these issues. For only two of the seventy relationships between the fourteen predictors and five policy questions are the group differences large enough to indicate that some categories of respondents give majority support to a policy that other categories in the majority oppose. Support for outlawing housing discrimination, for example, ranges from a low of 57 percent (for people with only elementary-school education) to a high of 97 percent (for people in managerial occupations). Similarly, opposition to physicians' having the right to order HIV tests ranges from 5 percent (for retired people) to 33 percent (for people in professional occupations).

Demographic Differences in Attitudes towards AIDS

The impact of the demographic differences on attitudes towards AIDS (shown in Table 5.12) is quite limited. The only strong effect is that of age on the issues of discrimination in housing and giving physicians the right to demand tests. About 90 percent of respondents under the age of thirty-five support the rights of HIV-positive persons to rental housing, compared to about 70 percent of those aged fifty-five or more; people under thirty-five are more than twice as likely as those fifty-five and over to oppose physicians' right to demand tests. By comparison, 84 percent of men and 82 percent of women would guarantee the right to rental accommodation, as would 82 percent of married people and 89 percent of people who are unmarried, and 89 percent of parents whose oldest child is under five and 81 percent whose oldest child is fifteen or more.

The other group differences in Table 5.12 are attributable to age differences between groups. For example, widowed persons' weak support for the right to rental housing (only 62 percent) is due largely to their relatively high average age, and the relatively advanced average age of people who have one or more children but none still living at home accounts for the relative conservatism of this group. There are some differences between the opinions of parents and non-parents and among parents with different numbers of children and with oldest children of different ages. These differences are, however, very small, and in large part they are due to the differences in the ages of these groups.

The nature of the relationship between these opinions and age lends further support to the conclusion that there are two distinct aspects, or dimensions, of attitudes towards AIDS. Opposition to housing discrimination decreases with age, whereas support for anonymous testing, for physicians' power to demand testing, and for providing needles is not related to age. Sex and marital status also have some anomalous effects. For example, men are more likely than women to say that they would send their children to class if the teacher were known to be HIV-infected, but men are less likely than women to support anonymous testing. In terms of marital status, the widows and widowers are the most distinctive group: they are 20 percent less likely than the four other groups to oppose housing discrimination, but they are the *most* likely to support providing needles to drug users. Part of the reason for the complex relationship between marital status and these attitudes is that widows and widowers are both much older than the other marital-status groups and predominantly female.

To only a minor degree do demographic variables affect people's attitudes towards AIDS. The only consistent finding is that support for the rights of HIV-infected persons is lower among older people. Even these are only differences in degree. While, for example, older people are less prepared to protect HIV-positive people from discrimination in housing, it remains true that about 70 percent of them would offer such protection.

TABLE 5.12
Position on AIDS policy issues, by demographic variables

Demographic variable	Category	Should be required to report HIV test (percent)	Should be required to notify partners (percent)	Should be required to notify physicians (percent)	Should be required to notify insurers (percent)	Number of cases*
Total		91	87	78	33	1753
Gender						
Male		91	86	77	32	1081
Female		91	89	81	34	672
Age						
18–24		88	83	77	28	216
25–34		90	88	77	32	641
35–44		92	90	82	37	399
45–54		93	89	78	34	143
55–64		93	94	76	30	145
65 or more		96	93	74	33	123
Marital status						
Married		93	89	78	30	742
Live with partner		94	91	81	41	193
Separated, divorced		91	90	80	37	278
Widowed		91	93	78	36	90
Never married		89	84	77	33	376
Number of children						
Never any children		90	86	77	31	1112
One child under 18		93	89	80	37	305
Two children under 18		93	91	80	37	190
Three children under 18		93	89	81	41	84
Four or more children under 18		94	91	78	36	101
For respondents with one or more children at home						
Age of youngest child at home						
Less than 5		93	91	81	36	301
5–9		94	91	82	39	213
10–13		95	94	84	40	128
14–17		96	94	84	41	170

*The actual number of respondents varies slightly within each demographic group because some respondents did not answer all of the questions. See the appendix for the actual number of respondents corresponding to each of the cells.

Socio-Economic Status and Attitudes towards AIDS

The reported willingness of Canadians to send a child to school if the teacher was HIV infected and their opposition to housing discrimination and to the right of physicians to order tests for AIDS all increase with education. Education has rather little impact on the two other items, which deal with anonymous testing and providing needles to injection drug users. Eighty-eight percent of university graduates would send a child to school and 94 percent would outlaw housing discrimination, compared to 63 and 57 percent, respectively, of people with elementary-school education. The impact of education on other aspects of AIDS policy is weaker. Probably because of concern about illegal drug use, university graduates are only about 10 percent more likely than people with elementary-school education to support providing needles to drug users.

Income affects policy attitudes in the same way that education does, but the group differences are smaller. For example, opposition to housing discrimination rises from 73 to 94 percent as household income increases from under $20,000 to $70,000 or more, while the comparable difference between the lowest and highest categories of education is between 57 and 94 percent. The attitudes of the approximately 5 percent of respondents who did not know their incomes resembled those of the lowest income category, while the respondents who refused to give their incomes resembled middle-income groups.

The effect of occupation on policy attitudes is also limited. Retired people stand out the most, mainly because their opinions closely resemble those of older people. Roughly speaking, the most liberal attitudes are found among the higher-status occupational groups and students, while people with lower-status occupations and retired people are more conservative. Regression analysis showed that, of the three socio-economic variables, only education affects attitudes towards AIDS: once education and age (to deal with the position of retired people) are taken into account, the effects of income and occupation on attitudes are negligible.

TABLE 5.13
Position on AIDS policy issues, by measures of socio-economic status

Socio-economic variable/category	Sero-test child to care (percent)	Outlaw housing discrimination (percent)	Provide anonymous HIV test (percent)	Denied knowledge physician to demand HIV test (percent)	Provide needles to injection drug users (percent)	Number of cases
EDUCATION						
Elementary only	63	57	67	7	29	97
Some high school	75	75	67	11	27	304
High school graduate	67	81	67	13	31	308
Technical college	85	88	71	20	38	236
Some university	89	91	63	27	43	114
University graduate	90	94	74	31	38	186
HOUSEHOLD INCOME						
Under $20,000	74	73	69	11	36	259
$20 - 29,000	76	83	67	16	29	182
$30 - 49,000	80	87	69	20	40	356
$50 - 69,000	86	97	81	21	37	213
$70,000 or more	85	93	74	20	35	154
Don't know	73	87	83	8	27	63
Refused to say	81	78	71	26	28	67
OCCUPATION AND LABOUR FORCE STATUS						
Professionals	94	94	73	43	42	91
Managers	89	97	81	29	30	68
Semi-professionals	87	89	66	19	25	89
Skilled clerical supervisors	84	94	79	13	40	101
Skilled craft supervisors	87	84	69	13	28	110
Semi-skilled clerical	79	91	69	18	43	140
Semi-skilled manual	77	86	63	15	28	168
Farmers, farm labourers	75	90	57	21	79	21
Unemployed	74	82	65	25	41	60
Student	89	93	68	17	33	81
Retired	78	87	60	5	31	153
Not in paid work/other	80	85	71	16	43	168

FIGURE 5.13A
Agree to send child to the class of an HIV infected teacher, by age, education, and household income

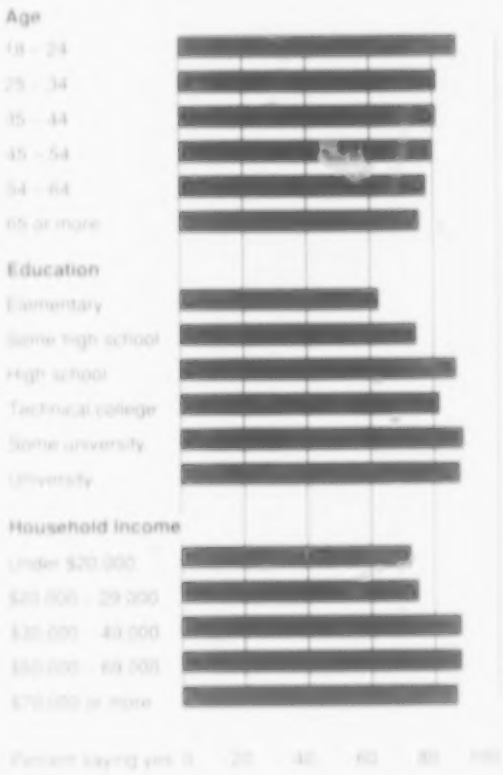


FIGURE 5.13B
Support for anonymous HIV testing, by age, education, and household income

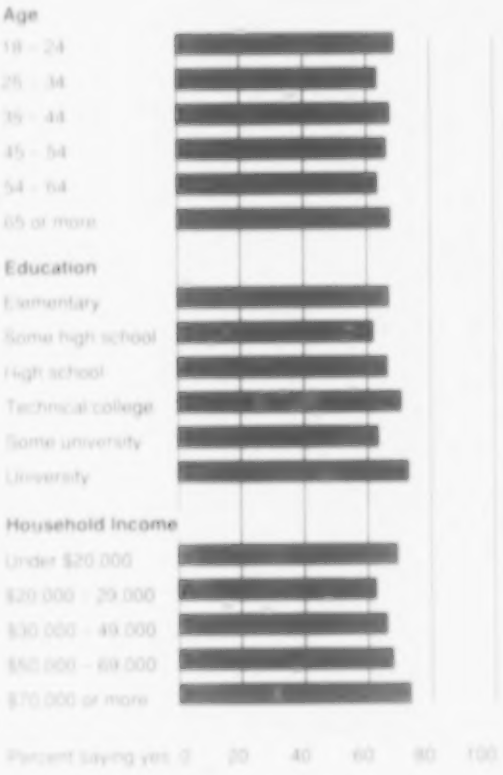


FIGURE 5.13C
Support for providing clean needles to injection drug users, by age, education, and household income

Cultural Differences

Ethnicity has relatively little impact on attitudes towards AIDS. For the most part, the differences among groups (see Table 5.14) are small and inconsistent, so that it is difficult to make any generalization. Members of non-European ethnic groups (considered together), for example, are the least likely to oppose housing discrimination but the most likely to support anonymous testing.

A serious shortcoming of this analysis is the crude measurement of ethnicity, which is made necessary by the relatively small proportions of Canadians in any one ethnic group aside from the French and English groups (the latter combining British, Irish, and Scottish respondents). In aggregate, Canadians who are neither French nor British account for a substantial proportion (about 35 percent) of the population, but no one distinct ethnic group appears in large enough numbers to permit a detailed analysis of its position when the overall sample is as small as the present one. There is likely to be considerable variation within, for example, the "non-European" group, which includes East Indians, Pakistanis and Bangla Deshis, Chinese, Vietnamese, and a variety of other Asians, and blacks from Canada, the United States, the Caribbean and Africa, and so on.

The major religious difference, in parallel with the impact of ethnicity, is between the *combination* of Protestants and Catholics (who are not much different in attitudes) and two groups: people with "other" religions, who are again a mixture of many different groups, and people who say they have no religion. While the differences are not large, people with no religion tend to be more liberal and people with "other" religions tend to be more conservative. Interestingly, there is no evidence that Catholics, despite the homophobic religious doctrines of their Church, are at all different from Protestants in terms of these attitudes.

Among people who say they have some religion, there is a distinction between those who say they never attend religious services and those who say they do, even if they attend less than "a few times a year." People who never attend have attitudes very similar to those of people with no religion – that is, they are marginally more liberal. The regression analysis showed that religion does not have a significant impact on attitudes, once differences in attendance at religious services are accounted for.

TABLE 5.14
Position on AIDS policy issues, by cultural variables

Cultural variable/category	Send child to class (percent)	Outlaw housing discrimination (percent)	Provide anonymous HIV test (percent)	Do not allow physicans to demand HIV test (percent)	Provide needles to injection drug users (percent)	Number of cases
ETHNIC GROUP						
British	86	84	67	17	36	474
French	79	86	67	20	31	343
Other European						
Northern, Western	83	83	66	24	31	134
Southern, Eastern	86	86	61	16	40	86
Non-European	72	73	72	13	36	100
None given, refused	74	79	68	12	24	113
RELIGION						
None	88	89	69	22	44	131
Protestant	83	80	63	16	32	476
Catholic	80	85	69	19	31	575
Other	73	74	71	12	47	61
For respondents with some religion						
FREQUENCY OF ATTENDANCE AT RELIGIOUS SERVICES						
Every week	78	78	65	20	25	216
Almost every week	84	83	62	13	29	84
One or twice a month	73	75	68	18	26	139
A few times a year	80	84	66	16	34	351
Less often	81	84	65	16	36	129
Never	90	90	74	19	42	180

Region and Community Size

Regional variation in attitudes towards AIDS is quite limited, and also depends on which attitude is being considered. For the questions about anonymous AIDS testing and providing needles to drug users, there is no statistically significant difference in regional responses – the variation among the six regions is 6 percent or less. For the questions about the HIV-positive teacher and housing discrimination, the respondents in Atlantic Canada are less tolerant than respondents in other regions: agreement to send a child to school is about 10 percent below the average for the rest of Canada (72 percent versus 82 percent); and opposition to discrimination in housing in Atlantic Canada is about 15 percent below the average in the rest of Canada (69 versus 84 percent). Although the question about the infected teacher is modelled on events that took place in Nova Scotia, it is impossible to tell whether these events were responsible for the survey finding or reflect pre-existing attitudes. The largest regional difference involves the policy of providing clean needles to injection drug users. Nearly a majority, 49 percent, of respondents in British Columbia supported this policy, compared with fewer than 40 percent in the rest of Canada. This likely reflects local conditions in that province and public acceptance of the first needle-exchange program in Canada, which is in Vancouver.

Size of community has little impact on these attitudes. Again, there appears to be an anomaly in the response to the five items. Canadians in villages and rural areas are least likely to say that they would send their children to a class taught by an HIV-infected teacher and to oppose housing discrimination, but they are more likely than people living in cities to be willing to supply needles to injection drug users. Still, these differences are very small. Of villagers and people living in rural areas, 74 percent say they would send their children to school, compared to an average of 83 percent in more densely populated areas. There is a comparable urban-rural difference in responses to the question about housing discrimination.

FIGURE 5.15A
Agree to send a child to the class of an HIV-infected teacher, by ethnic group and region

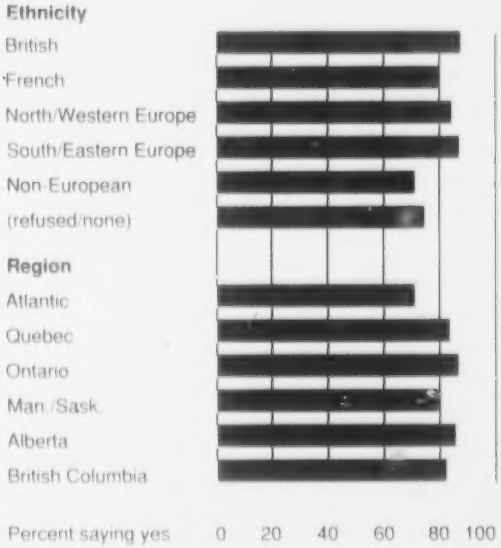


FIGURE 5.15B
Support for anonymous HIV testing, by ethnic group and region

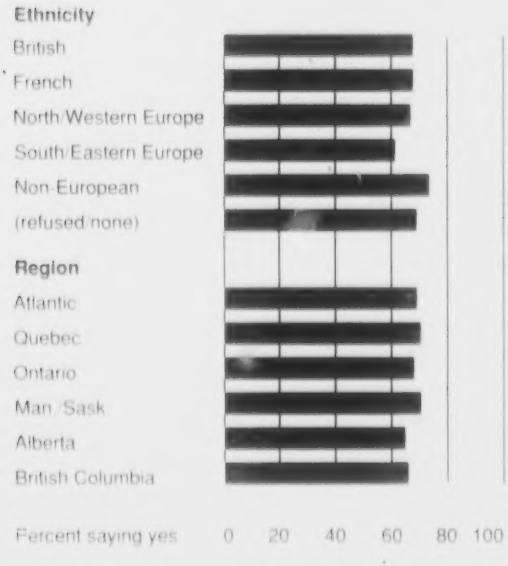


FIGURE 5.15C
Support for providing needles to drug users, by ethnic group and region

TABLE 5.15
Position on AIDS policy issues, by location and social contacts

Location/knowing someone with AIDS/ Know homosexual/ Knowledge & category	Send child to class - (percent)	Outlaw housing discrimination (percent)	Provide anonymous HIV test (percent)	Do not allow physicans to demand HIV test (percent)	Provide needles to injection drug users (percent)	Number of cases
REGION						
Atlantic	72	69	68	15	35	140
Quebec	82	86	69	15	25	278
Ontario	85	85	67	20	32	466
Manitoba-Saskatchewan	79	79	69	21	32	102
Alberta	83	84	64	17	38	123
BC	81	86	65	18	49	144
SIZE OF COMMUNITY						
Large city	83	85	69	22	36	341
Mid-size city	86	88	64	18	35	291
Small city or town	81	81	65	16	30	380
Village or rural area	74	77	71	13	31	239
KNOW SOMEONE WHO HAS OR HAS HAD AIDS						
No	81	83	67	17	31	1139
Yes	90	92	72	30	51	99
KNOW SOMEONE WHO IS GAY OR LESBIAN						
No	78	80	67	17	31	745
Yes, no gay or lesbian friend	82	85	65	18	31	274
Yes, also a gay or lesbian friend	92	93	71	21	43	222

Social Contact

It makes sense that, as well as knowing more about AIDS, people who know or knew someone with AIDS and who have a gay or lesbian friend would tend to be supportive of the rights of HIV-infected people and of more aggressive policies to prevent the spread of infection. The results in Table 5.15 show that this is the case. These variables have much more consistent effects on attitudes than other factors. Knowing someone with AIDS and having a friend who is gay or lesbian result in a 10 percent increase in positive response to the AIDS-infected teacher and in opposition to housing discrimination. The largest effect is that caused by knowing someone with AIDS, which increased support for providing needles to injection drug users from 31 to 51 percent. Interestingly, these variables have extremely weak effects on the question about anonymous testing, although the differences are in the predicted directions.

To a greater extent than is true of the other factors considered in this analysis, imposing statistical controls for age, education, and so on leaves the effects of knowing someone with AIDS and having a homosexual friend unchanged.

Knowledge about AIDS

Finally, Table 5.16 shows that knowledge about AIDS has a strong effect on attitudes. Only 62 percent of respondents scoring four or less out of nine on the knowledge scale said that they would send their child to school if the teacher were known to be HIV positive, compared to about 80 percent of those scoring between five and eight and 91 percent of those scoring nine out of nine. Similar results are obtained for the question about housing. Opposition to physicians' having the right to order HIV tests is 8 percent among those scoring four or less, about 13 percent for those scoring five to seven, 19 percent for those scoring eight, and 27 percent for those scoring nine out of nine.

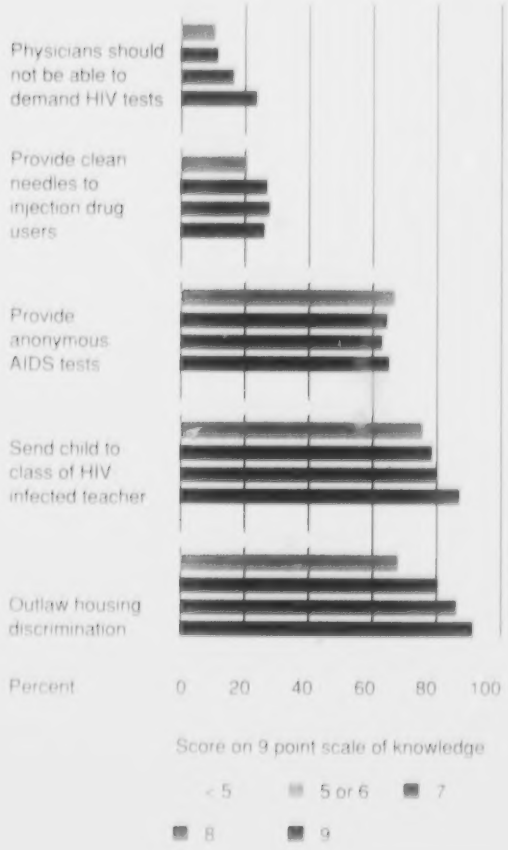
Answers to the questions about anonymous testing and providing needles to injection drug users are only weakly related to knowledge about AIDS, providing further confirmation that these issues are the subject of a number of conflicting influences. Support for providing needles to injection drug users is somewhat greater, by about 10 percent, among more knowledgable people. For anonymous testing the relationship is close to negligible, but the tendency to support anonymous testing appears to *decrease* as knowledge increases.

Education affects attitudes towards AIDS; and there is strong evidence, presented in chapter 2, that education has a strong effect on knowledge about AIDS. The multiple-regression analysis, however, shows that controlling for education does not substantially diminish the relationship between knowledge and attitudes. In other words, the tendency of more knowledgeable people to support tolerant policies does not simply mean that people with more education are more knowledgeable and tolerant. This is good news. Since people with more knowledge about AIDS are more willing to protect the rights of HIV-infected persons, AIDS education can help to increase public support for policies that support those rights.

TABLE 5.16
Position on AIDS policy issues by knowledge of AIDS

Knowledge of AIDS Score on 9 point scale	Send child to class (percent)	Outlaw housing discrimination (percent)	Provide anonymous AIDS test (percent)	Do not allow physicans to demand AIDS test (percent)	Provide needles to iv drug users (percent)	Number of cases
Four or less	62	61	73	8	29	116
Five or six	79	71	69	13	22	274
Seven	82	84	67	14	38	221
Eight	83	89	64	19	38	326
Nine	91	93	66	27	37	306

FIGURE 5.16
Position on AIDS policy issues, by knowledge of AIDS



Summary and Conclusions

Knowledge about AIDS is by far the strongest predictor of attitudes towards AIDS. Most clearly, individuals who know more about AIDS are more willing to protect the rights of HIV-infected persons in employment and housing. This is only partly because knowledge about AIDS is related to education and other variables. Knowledge of AIDS remains the strongest predictor of attitudes towards AIDS, even when individuals' demographic, socio-economic, and cultural characteristics, as well as their social contacts and location, are taken into account.

The general tendency for some people to support and others to oppose more tolerant policies in employment and housing does not extend to the more complex issues, which involve trade-offs between individuals' rights to privacy and to make decisions about their health care and the need to prevent the spread of HIV infection. Indeed, individuals' positions on those issues are very difficult to predict at least with the variables employed here.

Education stands out as the strongest of the demographic and socio-economic predictors of attitudes towards AIDS. When we account for the effect of education, neither income nor occupation (which independently affected knowledge of AIDS, as was shown in chapter 2) affects these attitudes. Better-educated Canadians are generally more willing to protect the civil liberties of HIV-positive people, but they are no more ready to endorse less traditional measures to deal with HIV infection and AIDS. Similarly, support for HIV-infected persons' rights in housing and employment declines with age, as does support for physicians' rights to demand tests – but age has little impact on the answers to the questions about anonymous testing and providing clean needles. Other demographic variables, such as sex, marital status, and number of children, have little impact on attitudes.

Some other variables exert small but statistically significant effects on attitudes towards AIDS: relative to the rest of Canada, respondents in Atlantic Canada were less protective and those in Ontario

more protective of the rights of HIV-infected persons; respondents who had a friend who was homosexual and or knew a person with AIDS tended to have more liberal views; people with non-European ethnic backgrounds tended to be less tolerant; people whose religion was neither Protestant nor Catholic were also less tolerant, but the main distinction was between people with a religion and those who said they had no religion or had a religion but never attended religious services – the latter were more supportive of the rights of HIV-infected persons.

More generally, there is a core of AIDS policy issues that can be understood in the context of traditional debates over civil liberties. Those issues involve conflicts between individuals and structurally more powerful individuals or institutions, such as employers and landlords. There are also a number of issues that do not fit into this paradigm. The difficulties arise when it comes to reconciling the rights of individuals and those of their peers or associates.

6 Conclusions and Recommendations

The scientific shortcomings of survey research on AIDS are minor in comparison to the task of converting research findings into effective policy. Compared to pure guesswork, however, efforts to interpret the policy implications of the national survey make a lot of sense. The following recommendations follow the organization of the chapters in which the findings have been presented and are accompanied by brief summaries of the results of the research.

Knowledge about AIDS

Virtually all Canadians know what AIDS is, and about 90 percent are able to give a reasonable description of the disease and how it is transmitted. Only a small minority of the population, fewer than 10 percent, identify AIDS in terms of the groups with high incidence or in terms of negative morality. Gay men are identified as the group with the greatest incidence of AIDS by about 60 percent of people.

Canadians have a generally high level of knowledge about the transmission of HIV infection, about the distinction between HIV infection and AIDS, and about the efficacy of different methods to prevent the transmission of HIV. There are, however, significant proportions of people with serious misconceptions:

- 26 percent believe that blood *donors* are at risk of HIV infection, and another 4 percent do not know if donors are at risk.
- 8 percent believe that HIV infection can be spread through food prepared by someone who is infected, and another 12 percent do not know if this is possible.
- 12 percent do not think that HIV infection can be spread through contact with a person who shows no signs or symptoms of the illness, and an additional 12 percent do not know.
- 11 percent believe that AIDS can be cured if treated early and a further 19 percent do not know if this is possible.

Knowledge about AIDS increases with socio-economic status: Canadians with more education and income and in higher-status occupations are the best informed. Other differentials are not as large, but should be considered in the development of educational programming. In particular, knowledge about AIDS is lower in Quebec than in the rest of Canada, and it is lower among people with non-European ethnic backgrounds. Parents' knowledge of AIDS is not, on average, much different from that of the population as a whole; in the neighbourhood of one-third of all parents do not have sufficient information about AIDS to inform their children adequately.

Recommendation 1

There is a need to continue efforts to inform the public about HIV infection and its transmission, and about AIDS. Particular attention should be paid to mistaken beliefs that cause harm to individuals and institutions, such as the belief that HIV infection can be spread through food, casual contact, or donation of blood.

Recommendation 2

Special efforts should be devoted to making AIDS education accessible to educationally and economically disadvantaged people. This concern should shape both the content of the information and the means used to communicate it.

Media and Responsibility for AIDS Education

Most information about HIV infection and AIDS comes through the mass media – television and newspapers – which dominate communication about public events in Canadian society. Given the need to find an answer to a particular question, however, most Canadians would choose to consult an expert, such as a physician, directly. People whose knowledge of AIDS reflects their use of print media and direct communication with experts and knowledgeable associates are generally better informed than those who rely on the electronic media. People with more education are much more likely to make use of the print media to find out about AIDS.

Rather than seeing AIDS education as the preserve of any single group or institution, Canadians are strongly accepting of the wide involvement of a broad range of health, governmental, and voluntary organizations. The only exception is religious institutions, whose involvement in AIDS education receives little support.

Recommendation 3

A variety of media should be used to provide AIDS education, but there should be special emphasis on written material that conveys information in a form accessible across the range of educational levels.

Recommendation 4

The present involvement of different organizations, institutions, and levels of government in AIDS education should continue, since it is congruent with the public view that a broad range of groups is legitimately involved in these activities.

Behaviour Involving Risk of HIV Infection

Concern about AIDS has led to significant changes in the sexual practices of Canadian adults. These changes have reduced the likelihood of HIV transmission, but about 15 percent of men and 5 percent of women appear to engage routinely in unprotected sexual practices with partners not well known to them. Among people with two or more partners in the last five years, only 19 percent of men and 12 percent of women use a condom every time they have sex, and 44 percent of men and 62 percent of women never use a condom. While having large numbers of sexual partners is only a source of risk if these partnerships involve unprotected sex, there is evidence that people with more partners are more likely to engage in behaviour that entails risk. Risk-taking practices are heavily concentrated among people who are unmarried and below middle age. Only a very small percentage of Canadians have shared a needle to inject drugs, but the *number* who have done so is quite large.

Recommendation 5

AIDS education dealing with sexual behaviour should be directed to unmarried and to younger people.

Recommendation 6

Efforts to prevent the transmission of HIV infection should stress the importance of taking effective precautions in *every* encounter in which there is risk.

Recommendation 7

Efforts should be increased to make known the risks involved in sharing needles to inject drugs.

Attitudes towards AIDS

Canadians are strongly supportive of the rights of HIV-infected persons to freedom from discrimination, and believe these rights should be protected by law. They are also supportive of measures to prevent HIV transmission. More controversial are measures designed to decrease the spread of HIV infection where there are conflicting interests – for example, between an individual's right to privacy and the desire to protect other people from HIV infection. Only a small minority of Canadians express opinions suggesting they fear that casual contact will lead to HIV infection. The key findings include:

- 69 percent of Canadians would permit their child to continue to attend a school class taught by a teacher who was infected with HIV, and another 8 percent would do so with qualification.
- 61 percent of the population would not allow employers to demand a test for the HIV virus from job applicants.
- About 80 percent of Canadians believe that HIV-infected persons should be legally protected from discrimination by landlords and employers.
- By more than a two-to-one majority Canadians support the provision of anonymous testing for HIV.
- There is very strong support for allowing physicians to demand a test for HIV from patients they suspect to be infected and for compelling HIV-infected individuals to disclose the names of their sexual contacts.
- 97 percent of Canadians support AIDS education in schools and 75 percent say those programs should begin when children are twelve years of age or younger, and a nearly two-to-one majority indicate support for allowing high school students to obtain condoms in their schools.
- About 60 percent of Canadians oppose providing needles to injection drug users.

Recommendation 8

On the basis of a broad public mandate, measures should be taken to prohibit discrimination in housing and employment against HIV-infected persons and persons living with AIDS.

Recommendation 9

Greater efforts are needed to explain the reasoning behind AIDS-prevention policies that involve more active intervention rather than mainly the protection from discrimination. These would include needle-exchange programs and policies relating to testing for HIV infection.

Recommendation 10

Efforts to educate school children about HIV infection and AIDS should be increased. Such efforts have nearly unanimous public support, and there is evidence that many parents do not have sufficient knowledge to educate their own children.

Final Word: Strengths and Weaknesses of This Survey; and Suggestions for Further Research

The strength of the present study lies in the information it provides about the present state of Canadians' knowledge and attitudes about AIDS and, to a lesser extent, about behaviour that involves risk of HIV infection. As a vehicle for research on behaviour that involves the risk of HIV infection, however, the size of the sample is something of a limiting factor. Only about a quarter of the sample fall into the demographic category – that is, they are unmarried and not old – whose sexual behaviour is of interest. Use of injection drugs is too rare to yield enough such people for this survey to draw conclusions about them. Regional, ethnic, and religious differences could not be measured with great precision; it should be noted, though, that the differences that were observed do not suggest that there are fundamentally different levels of knowledge and attitudes in the different provinces or ethnic and religious groups.

Perhaps the most serious limitation of the survey is not the sample size but has to do with the problem of inferring causal relations from data collected at one point in time. Variables that are *correlated* – for example, reading a brochure about AIDS and knowledge about AIDS – are not necessarily causes and effects. Although reading a brochure is one way to learn about AIDS, it is possible that people with more interest and knowledge about AIDS are more likely to pick up and read brochures than are people without the interest.

A single survey is also problematic because it is often difficult to interpret findings without the context of previous findings. More important than whether people are engaging in behaviour that risks HIV infection, perhaps, is the rate at which this behaviour is changing, and how the present situation compares to that of a year ago.

To some extent these shortcomings can be dealt with by conducting such surveys as the present one at regular intervals. Longitudinal surveys, in which individual respondents are interviewed on two or

more occasions, are a still better way to determine the causes and effects of changes in knowledge about AIDS, public support for particular policies, and behaviour. If the aim is to examine sexual behaviour and/or regional or other demographic sectors, consideration should be given to increasing the size of the sample and/or increasing the selection probabilities of important groups.

Recommendation 11

Consideration should be given to conducting the following additional research:

- A repetition of the survey described here, in order to determine the extent of change in knowledge and attitudes towards AIDS; there should be discussion of the advisability of increasing the size of the sample to provide more precise comparisons among important subgroups of the population.
- Development of a survey focusing on sexual behaviour related to HIV infection that would oversample individuals in the demographic groups in which risk is prevalent.

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Notes

Chapter One: Objectives and Procedures

1 See Lorna R. Marsden, "Social Science and Research on AIDS: Priorities for Canada," in *AIDS: A Perspective for Canadians*, report of the Royal Society of Canada (Ottawa 1988), background papers, 333–46, and 22ff. of the summary report and recommendations.

2 For example, see the November 1986 statement by the Honourable Jake Epp (at the time Minister of National Health and Welfare) entitled "Achieving Health for All: A Framework for Health Promotion."

3 In a sample that is representative of Canada as a whole, with the number of respondents in the present study, there would be too few residents of the Territories to allow us to say anything about them as a group. The argument is not that the North should not be the subject of a study such as this one. But this survey is not the proper means to conduct such a study.

4 These questions asked respondents what they thought were the most important and second most important health problems facing the country today, and what they thought would be the most important such problem ten years from now. Because respondents were initially informed that the survey dealt with AIDS, their answers to these questions are heavily biased in the direction of saying that AIDS was the most important problem. For this reason, the answers to these questions are not used in the analysis.

5 See Howard Schuman and Stanley Presser, "The Open and Closed Question," *American Sociological Review* 44 (1979), 692–712.

6 See Howard Schuman and Stanley Presser, "The Assessment of 'No Opinion' in Attitude Surveys," in Karl Schuessler, ed., *Sociological Methodology* (San Francisco: Jossey-Bass 1979), 241–74.

7 See Norman M. Bradburn, Seymour Sudman, and associates, "Effects of Question Threat and Interview Method," in Bradburn, Sudman, and associates, *Improving Interview Method and Questionnaire Design* (San Francisco: Jossey-Bass 1979), chap. 1.

8 All these estimates of error assume simple random sampling. The procedure for selecting telephone numbers involves systematic selection and results in a sample at least as efficient as a simple random sample. Observations are weighted by the number of adults in the household divided by the number of telephone lines, and this decreased the efficiency of the sample somewhat.

9 A fine discussion of the terminology of AIDS may be found in Jan Zita Grover's "AIDS: Keywords," in *AIDS: Cultural Analysis / Cultural Activism* (Cambridge, Mass.: MIT Press 1988), 17–30.

10 See the February 1989 edition, p.5.

Chapter Two: Levels of Information about AIDS

1 Because the impact of emphasizing the "don't know" response is very weak, in the analysis below no distinction is made between respondents who received the two different versions of the question.

2 Measurement error is independent of, and adds to, sampling error. Sampling error is a function of the size of the sample; it decreases as the sample grows larger.

3 A good introduction to scale construction is George W. Bohnrstedt, "Reliability and Validity in Attitude Assessment," in G.F. Summers, ed., *Attitude Measurement* (Chicago: Rand McNally 1970), 80–99.

4 The items in Table 1.4 dealing with women transmitting AIDS and the items in Table 1.5 dealing with having one partner in a long-term relationship are left out of the scale because statistical analysis showed that they did not improve the reliability of the scale. More complex procedures, that differentiated incorrect from "don't know" responses and assigned different weights to the items being combined, would produce only a marginal improvement in the quality of scale – at considerable cost in terms of added complexity. The uni-dimensionality of the scale was verified using factor analysis.

5 For respondents born in Canada, ethnicity was measured with a question that asked, "To what ethnic group did your ancestors belong on first coming to this continent?" Respondents who mentioned more than one group in answer to this question were assigned to the group they named first. For respondents born outside of Canada, ethnicity was measured on the basis of place of birth.

6 Also low in information are respondents who did not identify themselves as belonging to any ethnic group, or would not disclose their ethnic background. Without a much larger sample, unfortunately, not much can be said about these two groups.

7 Multiple regression provides estimates of the effect of two or more variables on a *dependent* variable (here, knowledge about AIDS). The effect of each variable is estimated on the assumption that all other variables are held constant. For example, the differences in the levels of knowledge of individuals with different levels of education are estimated on the assumption that individuals with *different* levels of education are *equal* in other respects. That is, they are exactly alike in age, income, occupational distribution, and so on.

Chapter Three: Behaviour Involving Risk of Infection

1 Good brief reviews of this literature and its application to AIDS may be found in George A. Lamb and Linette G. Leibling, "The Role of Education in AIDS Prevention," and Susanne B. Montgomery and Jill G. Joseph, "Behavioural Change in Homosexual Men at Risk for AIDS: Intervention and Policy Implications," respectively pp. 215–22 and 323–34 in *New England Journal of Public Policy* 4, no. 1 (Winter/Spring 1988). A more general discussion is M.H. Becker and L.A. Maiman, "Models of Health-Related Behavior," in David Mechanic, ed., *Handbook of Health, Health Care, and the Health Professions* (New York: Free Press 1988).

2 This document is a "Report from the Canadian AIDS Society Consultation on Safer Sex" and is published (and available from) the Canadian AIDS Society.

3 Robert M. May, Roy M. Anderson, and Sally M. Blower, "The Epidemiology and Transmission Dynamics of HIV-AIDS," *Daedalus* 118, no. 2 (Spring 1989): 163–201.

4 Five years is a long enough interval that we can expect considerable errors in recall. Methodological research suggests that the predominant errors will involve the failure to recall activities that did take place; there will be a partially compensating "telescoping" of responses so that events that occurred more than five years ago will be counted as having occurred within the five years. A more refined effort to obtain these measures should involve the collection of data for a shorter time period, say one year, *as well as* over the five-year interval.

5 Robert M. May, Roy M. Anderson, and Sally M. Blower, "The Epidemiology and Transmission Dynamics of HIV-AIDS," 184–5.

6 Because the number of respondents with two or more partners is relatively small, these estimates, especially those for women, are much less precise than those in the previous analysis. Totals of 203 men and 95 women who had had two or more partners in the previous five years are included in Table 3.3.

7 Separate analyses were conducted for women and men. As outcome measures, four variables were employed: the probability of having two or more, three or more, and six or more partners; and the probability of having had sex with someone that he or she did not know very well.

8 Ordinary least squares (OLS) regression is used to make the adjustment. Logistic regression was also employed as a check on the OLS results. There were no important differences in the results obtained using the two different estimation techniques. To avoid cumbersome language, we assume that exclusively lesbian women are excluded whenever reference is made to individuals with two or more partners. In any event, insufficient numbers of women identified themselves as lesbians (see Table 3.1) to allow sexual orientation to be included in the analysis presented in Table 3.5.

9 For example, see 325ff. of Susanne B. Montgomery and Jill K. Joseph, "Behavioral Change in Homosexual Men at Risk for AIDS: Intervention and Policy Implications."

10 There may be a reciprocal relationship between knowledge and behaviour involving risk. While it makes sense to think that perceptions of risk affect behaviour, it is also possible that people whose practices expose them to infection are more likely to seek out or be exposed through educational programs to information about AIDS. Thus behaviour would affect the acquisition of information, rather than the reverse.

11 The precision of this analysis is markedly reduced by the small population base, consisting of respondents who had had two or more sexual partners in the previous five years and who reported that they changed their behaviour: 112 men and 43 women.

Chapter Four: Information about AIDS

1. The methodological problems described here must be addressed in all studies designed to evaluate the effectiveness of educational programs and other "interventions." The solution is to collect data from the same individuals on two or more occasions, with at least one measurement preceding the intervention whose effect is to be evaluated.
2. This discussion is based on a regression analysis in which use of the six different sources of information about AIDS was regressed on all five factors simultaneously. This was necessary because the factors are related.

Chapter Five: Public Policies

1. There is now fairly stong evidence that HIV-infected persons are much more likely to transmit the virus at the time of their own initial infection and shortly before the onset of symptomatic illness. See Charles F. Turner, Heather G. Miller, and Lincoln E. Moses, *AIDS: Sexual Behaviour and Intravenous Drug Use* (Washington: National Academy Press 1989): 76–7.
2. A detailed discussion of the legal aspects of AIDS may be found in Martha Mackinnon and Horace Krever, "Legal and Social Aspects of AIDS in Canada," in Royal Society of Canada, *AIDS: A Perspective for Canadians*, background papers, 347–404; see especially 380ff.
3. See John M. Last, "National and Social History of Epidemics," in Royal Society of Canada, *AIDS: A Perspective for Canadians*, background papers, 9–14, and Charles E. Rosenberg, "What Is an Epidemic?" *Daedalus* 118, no. 2 (Spring 1989): 1–17.
4. This research strategy was developed in a series of studies by Peter H. Rossi. The most complete description is found in Peter H. Rossi and Steven L. Nock, eds., *Measuring Social Judgements: The Factorial Survey Approach* (Beverly Hills: Sage 1982).
5. One advantage of varying the content of survey items in this way is that one is not forced to choose among a number of quite different possible scenarios. A subsample of the respondents can be asked to respond to as many versions of the question as are required to cover the potential real-life contexts in which it might arise. The average response, which in this case is aggregated over a number of different versions of the question, can thus be seen to provide a better estimate of public opinion than any one version. This average response is not, however, an average in any strict quantitative sense, because that would require that the various versions of questions are equally likely to occur and that they are equally important.
6. Significance tests were obtained from a logistic regression of response on sets of dummy variables measuring the sex and sexual orientation of the teacher, the health assurances given, and the sex and age of the student.

7 The impact of saying that the teacher is a gay man is no greater when the school child is described as a boy than when she is described as a girl.

8 For the present policy on confidentiality of testing, refer to the report of the Federal–Provincial–Territorial Working Group on Confidentiality in Relation to HIV Seropositivity, dated November 1988 and available from Health and Welfare Canada; its contents are summarized in *Canada Diseases Weekly Report* 15, no. 8 (25 Feb. 1989): 43–7. The recommendations are based on Margaret A. Somerville and Norbert Gilmore, "Human Immunodeficiency Virus Antibody Testing in Canada," which is available from the Health Protection Branch of Health and Welfare Canada. For a statement of current recommendations about the circumstances in which testing is appropriate, see "Human Immunodeficiency Virus Antibody Testing in Canada," the recommendations of the National Advisory Committee on AIDS, reported in *Canada Diseases Weekly Report* 15, no. 8 (25 Feb. 1989): 37–42.

9 A detailed discussion of programs underway in a number of different countries and evaluations of their success may be found in Charles F. Turner, Heather G. Miller, and Lincoln E. Moses, eds., *AIDS: Sexual Behaviour and Intravenous Drug Use* (Washington: National Academy Press 1989), 204ff. The Royal Society of Canada's recommendation, in the Summary Report and Recommendations of *AIDS: A Perspective for Canadians* (17), reads: "We recommend that free condoms, needles, syringes and facilities for decontaminating needles be made available to injection drug users who choose not to refrain from behaviours that could transmit HIV."

10 There is an extensive literature in political science and sociology dealing with the organization of opinions about political issues and voting. When individuals' attitudes are strongly interrelated, they are said to be "constrained."

11 The table following shows the relationships between the responses to eight of the attitude questions. The coefficients in the table are gammas, with possible values ranging from −1 to +1; a gamma value of zero indicates no net relationship between the variables, and −1 and +1 indicate perfect relationships between two variables (in the two opposite directions). This measure of association indicates how well one *ordinal* variable can be predicted from the value of another ordinal variable. The gamma values are calculated with missing values for each pair of variables omitted and by ordering all the non-missing responses for each variable.

	a	b	c	d	e	f	g
a Send child to school							
b Anonymous test for HIV infection	16						
c Require naming partners	21	26					
d Do not test job applicants	40	20	35				
e Outlaw housing discrimination	61	27	45	68			
f Provide free needles	14	08	16	05	19		
g Protect existing employees	65	14	50	52	79	12	
h Doctors cannot demand test	38	48	82	53	70	04	51

12 Scores on this scale ranged from zero, given to people who were totally opposed to protecting the rights of HIV-infected persons, to four, for respondents with positive answers to all four. The mean of the scale is 3.15, which reflects our findings that there is strong support for measures to protect people who are HIV infected; the standard deviation of the scale is 1.20.